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THE MAHOGANY TREE:

ITS BOTANICAL CHARACTERS, QUALITIES AND USES, WITH
PRACTICAL SUGGESTIONS FOR SELECTING AND CUTTING
IT IN THE REGIONS OF ITS GROWTH,

IN THE

WEST INDIES AND CENTRAL AMERICA,

WITH NOTICES OF

THE PROJECTED INTEROCEANIC COMMUNICATIONS OF

PANAMA, NICARAGUA, AND TEHUANTEPEC,

IN RELATION TO THEIR PRODUCTIONS, AND THE SUPPLY OF FINE TIMBER FOR
SHIP-BUILDING AND ALL OTHER PURPOSES;

WITH A MAP AND ILLUSTRATIONS.

AND

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AN APPENDIX,

CONTAINING THE DOCUMENTS PRESENTED TO THE

LLOYD'S COMMITTEE OF REGISTRY,

IN FAVOUR OF

THE USE OF MAHOGANY,

FOR THE BUILDING OF FIRST-CLASS VESSELS.

LIVERPOOL:
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PREFACE.

Some years ago Mr. Edward Chaloner put forward a Pamphlet, on the subject of the preparation of Mahogany for shipment to this country. This met with such a favourable reception, that two editions were soon expended; and many Friends enquiring for such information, it became desirable to reprint it. In so doing, the idea has naturally suggested itself, that it might be made much more interesting, if accompanied with a short sketch of the various places producing the Mahogany Tree, more especially at the present time, when the concentrated attention of the world is turned towards the marvellous development of California, and the Countries bordering the Pacific Ocean; causing the reproduction of various schemes which are now being acted upon to obtain ready access to them by crossing the Central Isthmus of America; and this happens to be precisely the zone in which the Mahogany tree, and other fine and hard woods, exist in great abundance.

From a growing conviction that the period is not remote when the trade in the Tropical Woods of America with this country may be greatly extended, more especially in that of Mahogany, which, in respect of quality, durability, dimensions, and beauty, greatly exceeds that of all others known to us, we are persuaded the next move of consequence will be directed to that quarter of the world, and that such a trade eventually may be made to approximate in value to that of the Colonial Fir Timber itself, which, comparatively speaking, is but of recent date, and in its origin was promoted by the earlier importers receiving a bounty at the expense of the community, in order to enable them to compete with the Fir trade of the Baltic, which latter continues to this day oppressed with heavy import duties, greatly to the detriment of national interests. Time was, only a few years since, when not more than two or three small cargoes of Firs were imported into Liverpool from America in a year, but its consumption now needs almost *such* an importation daily. Until the year 1845, Mahogany, although by far the greater portion of it came from British Settlements, did not meet with equality of treatment. It never seemed to have entered the minds of our Statesmen, or even of the Public generally, that it might compete with the Woods of North America or the Baltic in any other manner than as a luxury. Mahogany was loaded with duties, so that by these means it had not a chance of being consumed as a raw material, concurrently with the Timber of North America.

However the views of our legislators have become more rational by the alterations of the Tariff which now admits Mahogany free of all duty; an intercourse is encouraged between our possessions and the Countries on the Continent of Central America, in which that and other woods are obtainable in exchange for British Manufactures; and we are sanguine that, before long, the trade in the plainer, though finer sized Mahogany, will bear a comparison with that of the Firs of Europe at least, and that too forced on by a just appreciation of the qualities of Mahogany, daily more and more proved to be susceptible of infinite application for all the purposes of Furniture and Structures, as well as its great advantages in the important art of Ship-building.

With a view to elucidate that part of the present subject which relates to the countries in which Mahogany is found, we have availed ourselves of the assistance of our esteemed friend Mr. GEORGE O'GORMAN who was a resident for upwards of sixteen years in various parts of Mexico, and who acted as Secretary to the Association of the Honduras Merchants, and his services in that capacity were duly appreciated in his advocacy of the extension of the use of Mahogany, and more particularly for its unrestricted employment in Ship-building; it is, therefore, a pleasure to express our acknowlegements to him, and, also to our friend, Mr. ROBERT DALE, whose valuable assistance was constantly given to the Honduras Committee for the promotion of the interests of the Mahogany trade, and for the accumulation and arrangement of the materials, now condensed by these gentlemen, from every available source of information which has been deemed worthy of notice.

The present enquiry has given occasion to consult the Official Blue Books on the British Colonies, Mosquitia, and the States of Central America, (compiled by Mr. Mac Gregor, M. P., for Glasgow); the narratives of Cortez, and the Voyages of the early Discoverers, both Spanish and English; the Essays of Humboldt, Chevalier, Stephens, Squier; the Surveys of Baily, Moro, Garella, Lloyd, Hopkins, and other writers upon the projected communications referred to in Rockwell's Report to the House of Representatives of the Thirtieth Congress of the United States. Search has been made into the modern accounts of these countries for facts connected with the the present subjects; so that in view of such an accumulation of evidence, the public may rest satisfied that it is not upon any speculative opinions of our own, we have considered it highly important in a national point of view, to call the special attention of the Shipping Interests, as well as of every other concerned in the Fine Wood Timber Trade, to the immense advantages to be derived from cultivating more extended and intimate commercial relations with the countries noticed in the following pages.

CHALONER & FLEMING,

MAHOGANY AND TIMBER BROKERS.

LIVERPOOL, 31*st December*, 1850.

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INTRODUCTION.

It is now many years since the Trade in Mahogany and other fine Woods used in Furniture, has formed an important branch of our profession as General Timber Brokers in this town; and it has been our study, from time to time, to give every information to our friends, as to the mode of best cutting their wood in the primeval forests of the New World, and judiciously preparing their cargoes for a market, so as to secure themselves from the hazards to which this trade, perhaps more than most others, is exposed from improper selection, and want of knowledge of the dimensions suited for the demand of this and other countries, which receive their supplies from Liverpool. With this view, we published, in the year 1837, a small pamphlet, (which has been long out of print,) containing suggestions for the conduct of the Mahogany business, but we have, in each successive year, issued circulars to correspondents, advising them of every subsequent alteration as regards imports, duties, and sales, which could affect their interests.

Since that year, however, changes of vast importance have not only taken place in the political relations of the States from which Timber is supplied, but by the judicious alterations in the Tariffs of this country, all Woods adapted for Furniture were deemed to be only raw material; the duties were gradually reduced, until at length, in the year 1844---1845, Sir Robert Peel caused the whole of them to be totally abolished—and perhaps in no other trade more than that of Mahogany and other fine Timber, has the wisdom of these measures been, in so short a time, demonstrated. It was long known that these valuable Woods, obtained within the tropics, possessed qualities which admirably adapted them for purposes to which the heavy duties alone prevented their extension: such as House and Church-building, Railways, and in a remarkable degree, they have been applied to Ship-building, Carriages, and ordinary Furniture: and now observe the wonderful stimulus this has produced, when we state that the import of Mahogany into this Port alone, which was 3388 tons in 1842, was in 1845, increased to 14,500 tons.

But, if such have been the extraordinary results of the recent abolition of duty, what a still more magnificent prospect opens to view, when, within two short years only, the world has been electrified by the stupendous discovery of mineral treasures in California, which, almost fabulous as it may appear, has already caused the commerce on the shores of the Atlantic to be augmented by one-fourth of the total of what it was, to all parts of the world, in 1847, and has brought the whole of the Western Coast of America, both North and South, to the knowledge of, and subject to, the energetic action of all the civilized nations of the earth.

Before this discovery, it is true, the minds of all enlightened Philanthropists, and a few keen-sighted statesmen, have been, more or less, at different epochs, so intimately persuaded of the great advantages that would result from facilitating the transit of commerce across the American Isthmus, that many speculations have been set on foot for effecting this, either by canals or railroads, or even common macadamized roads; but as these advantages were only theoretically demonstrable, the projects either languished or were totally abandoned, from the impossibility of inducing capitalists to advance the requisite funds.

But now with the certainty that the mineral wealth of California is no longer a dream, (although gross exaggeration is ever to be found in connection with mining pursuits), and that it is producing a revolution in commerce, and changing the relations, and exciting the energies of every maritime state, it seems that the time is come, in the inscrutable designs of Providence, that the enduring benefits of civilization are to be dispensed to the whole of the Western Continents of America. Although their outlines have been geographically known for three hundred years, their interior has nearly been a terra incognita, thinly inhabited by ignorant and savage tribes—little explored by men of science, and unvisited by friendly traders, their condition and resources have been concealed, or useless to man.

Now all this is rapidly changing; and it is felt that these barriers must be broken through and become the highways of the world. Happily, instead of rival nations exhausting their resources in a vain endeavour to obtain the sole possession of these countries, they are seen peacefully joining hands, and binding themselves by treaty stipulations, to combine their powers to promote, invite, and protect their respective subjects for the accomplishment of these desirable communications, so that doubts no longer exist but that one, if not all of the three grand routes of Panama, Nicaragua and Tehuantepec will, at no distant day, be thrown open to the commerce of the world.

Of necessity, therefore, the exploration and colonization of these beautiful countries, all situated within the tropic of Cancer, will be immediately presented to the view of the tens of thousands traversing the Isthmus in search of settlements in the New World, and they cannot fail being struck with the unbounded sources of wealth they present, rendering their proceeding further to the arid and inclement regions of the far North-west, quite unnecessary.

It is a curious but undoubted fact, that precisely this region, which must be traversed to reach California and the West Coast of America, is that to which the growth of Mahogany is limited by nature on that Continent; and then it follows as a consequence, that its dense and extensive woods must be opened out; and that they will yield materials of inestimable value, amply sufficient to supply for ages the demand of all Europe.

Thus it appears that the present moment is favourable for directing the attention of the Commercial World to these new sources of supply of Mahogany; as well as repeating to the notice of our friends much of what we have laid before them in the past years, then restricted more especially to the productions of British Honduras and the West India Islands; adding thereto what the occasion seems to call for, and which may be of general interest, a short account of the countries producing the Mahogany tree, its various qualities, how it is cut, collected and prepared for sale; when it was first brought into notice; its present uses and applications, and how such an important trade is susceptible of improvement and of unlimited extension. Each of these subjects will be treated of under separate heads, accompanied by such diagrams and illustrations as may render technical terms intelligible to the general reader; and which it is presumed may not be without utility, or curiosity, to those of our friends who may be practically engaged in the business.

CHAPTER I.

Region in which the Mahogany Tree grows: the Islands of Jamaica, Cuba, St. Domingo, and Porto Rico, with their principal ports. Countries in which Mahogany is found in the Great American Isthmus, from the Strait of Darien to Tehuantepec, in Mexico. General aspect, climate, soil and productions of the Region in which the Mahogany and other fine Forest Trees abound. Enumeration of these latter, distinguishing those already known to the Wood Trade, from those not yet introduced into use.

The region in which the Mahogany Tree is most abundant, and found to grow in great perfection, is comprised between the Latitudes of 11° and 23° 10′ North, and it includes within these limits, the following countries: The group of the large Islands in the Caribbean Sea, of Jamaica, Cuba, Saint Domingo, and Porto Rico, which are between the north latitudes of 17° 40′ and 23° 10′, and between 65° 45′ and 85° of west longitude from Greenwich; and as they are all traversed by ranges of high mountains, their climate and productions, both vegetable and mineral, are nearly the same. The Mahogany, and other fine and hard woods are found in them all, and of superior quality to those of the adjacent Continent of America, owing, no doubt, to their being found in places considerably elevated above the level of the sea, or on rocky or arid ground. Their other productions are similar to what are met with in all the West India Islands, as well as on the main land in the same latitudes, and therefore one general enumeration will suffice for them all, as will be hereafter particularized. Any difference that there may be in the mode of cutting and preparing their Mahogany for export, from what is described under the head of Honduras, will be noticed in speaking of the various kinds of Wood sent to this market. The following is a list of the several Ports in these Islands, which are resorted to for Mahogany and other products.

In CUBA, to the North, are the harbours and roadsteads of Honda Bay, Havana (the Capital), Matanzas, Cardenas, San Juan, Curiana, Puerto Principe, Caravelas, Las Nuevitas, Manati, Puerto Padre. Gibara, Naranja, Nipe, Levisa, Tanamo, Cebollas and Baracoa; and to the South are Baytiqueri, Puerto Escondido, Guantanamo, Santiago de Cuba, El Portillo, Manzanillo, Santa Cruz, Negrilo, Trinidad, Jagua, Cochinos, Guines and Batabano; and most of them are perfectly secure for large vessels in all seasons.

In SAINT DOMINGO, on the French side, on the West and North are the harbours of Port au Prince, (the Capital), Jeremie, Leogane, San Marcos, Gonaives, Salines, Cape Nicholas Mole, Port Paix, Acul Bay, Cape Haytien, Fort Royal, Manzanillo, and Monte Christo; and in the South, Aux Cayes, Saint Louis, Aquin and Jaquemel. The Dominican Republic occupies the Eastern half of the Island, and possesses the ports of Saint Domingo, (the Capital), Nigua, Bani, Ocoa, Azua, Baraona, Boca Narciso, Petit Trou, Nieva River and Agujas Bay on the South, and the Bay of Higuey, Macao, the beautiful Gulf of Samanà, with Savana la Mar, to the East; and Hermitano, Estero Grande, San Juan, Puerto Plata, Port Caballo, and Isabel Bay to the North.

In PORTO RICO, the Capital of the same name is the only harbour frequented by foreigners. The productions are the same as those of all the West Indies.

JAMAICA is too well known to need enlarging upon its commerce in this place. It once exported large quantities of beautiful Mahogany, but none is now very accessible from the coast, though still to be seen on the mountains.

There are Commercial Agencies already established in many of the above named places; and here it is only necessary to observe, that the exportation of fine Woods from Cuba and Saint Domingo to this Port, have partaken of the general stimulus given to the Mahogany trade, by the abolition of the duty; and it is greatly and beneficially on the increase.

Attention is next directed to the Countries on the Continent of America, which are situated between the 8th and 18th degrees of North Latitude: and they are all comprised in what is generally understood as the Isthmus which connects the Continents of North and South America, which extends from the Strait of Darien in New Granada, traverses the whole of the States of Central America, and finishes at the Isthmus of Tehuantepec, in Mexico; a distance of nearly 1200 miles in a line from East to Northwest.

The coast line to the northward is on the Atlantic Ocean: but it is interrupted by the jutting out of the Peninsula of Yucatan, which approaches the Island of Cuba, in the Caribbean Sea, having the Gulf of Mexico on its west side, and the deep Bay of Honduras to the east.

The south shore of the American Isthmus is washed by the great Pacific Ocean, forming a wide indented curve line at the narrowest part at Panama; following the Coasts of Veragua and Costa-Rica, and thence running directly along the Coast of Nicaragua, parallel to the great inland lake of that name, it bounds the States of Salvador and Guatemala; and finally taking a N. W. direction, it extends to the Isthmus of Tehuantepec in long. 94° 30′ W. of Greenwich, and this passage is wholly in the territory of Mexico from sea to sea.

Comparatively with the vast extent of this immense Isthmus, the whole may be said to be little known to Europeans. Its surface is nearly covered with the densest forests of Mahogany, and other gigantic trees, with an underwood of many valuable tropical shrubs and plants, so matted together, that it is difficult for parties on foot to make a track into the interior.

The situation of this Country is peculiarly favourable for commercial intercourse with every other part of the world; the whole of the great Pacific Ocean is before it to the West, and to the North and East it commands the Gulf of Mexico and the West Indies, and beyond them is the Atlantic Ocean, with Europe and Africa on one hand, and America on the other.

The shores of the Isthmus are every where indented with numerous bays and harbours, with many large rivers, such as the Coatzacoalcos, Tabasco and Sumasinta, running to the Gulf of Mexico—the Hondo, Gualan and Sarstroon in British Honduras—with the Gulf of Dulce and rivers communicating with it on the Guatemala shore of the Atlantic, and numerous rivers in the Mosquito territory, from Truxillo to the great river of San Juan, this last being the only one communicating with the Lake of Nicaragua; all which will be enumerated when more particular notice is taken of those countries.

The face of this Country generally presents a succession of sierras or mountains with intervening vallies, and consequently all the physical and natural peculiarities not only of the tropics, but also of the temperate climates are to be found over this central region. The spine of the whole Continent is but a continuation of the great chain of the Andes, though at a much less elevation than what is known in the Rocky mountains to the north or the vast summits in Columbia and Peru. This great range is, however, interrupted in its course by the tranversal vallies in which are found the great Lake of Nicaragua; the Isthmuses of Panama, in Columbia, and Tehuantepec, in

Mexico; of which separate mention will be made as being the three most practicable places for opening communications between the Atlantic and Pacific Oceans.

The seasons within the tropic may be said to be only two, and are distinguished into the rainy and the dry; not altogether happening at the same periods over the whole region, but invariably the rains come on as the sun approaches the vertical of each locality, and then cease after it has passed to the southern hemisphere.

The soil of all these countries is, for the most part, exceedingly fertile. In the plains, and especially in the vallies, it is a dark rich mould, of alluvial formation, which might serve as manure for lands in other parts of the world. To this fertility of the soil, and to the gradations of temperature, may be attributed the variety and abundance of the productions, which embrace nearly all those of the West Indies, besides some that are peculiar to this country.

Of these the most valuable are Indigo, Cochineal, Tobacco, Cocoa, Vanilla and Wax, Sarsaparilla, Balsam of Peru, and the Amber tree, Ginger, &c., which are staple commodities; Indian Corn, Rice, Yams, and Plantains grow abundantly, with little care. The Sugar Cane thrives luxuriantly, also the Coffee Plant; and a species of Cotton grows wild, which the Indians collect and manufacture into very beautiful fabrics. A great variety of medicinal plants are collected, as well as Gums, Spices, and Balsams, amongst which the most in esteem are the Copal, Acacia, Quitini, Quapinol, Incense, Chiraca, and the Gum of the chesnut tree; and an oily substance is also extracted from the fruit of this tree, from which candles are made as fine as those of white wax. The fruits of this region are also incomparably fine, being of every kind to be found in the West Indies, and almost all European vegetables can be raised without any trouble.

But what is most important, and worthy of all attention in these parts, is the extent of its vast and interminable forests, replete with the most valuable Timber trees already known to commerce, besides an infinite variety ot Woods desirable for the Dyers, Cabinet-makers, House and Shipbuilders, the very names of which are scarcely known to Botanists, although the Indians have taken advantage of them for their primitive manufactures and for the construction of their canoes and warlike instruments, esteeming them for their hardness, tenacity, elasticity or durability, according to their respective applications. Ot the Dyewoods it is scarcely necessary to mention the Logwood, Fustic, Brazil Wood and Nicaraguawood already so well known. The St. Juan and the Poro yield a beautiful yellow ; and the Annona reticulata, though perfectly white, changes colour on being cut or slit, and yields a clear brilliant red, which is easily extracted.

But the productions of the forest are those which, in the first instance, must fix particular attention in this publication, more especially the trees of large growth.

The following are such as are already well known to the wood trade in this port, and admit of their qualities and uses being correctly appreciated—they are, Oak, Ash, Beech, Cedar, Firs, Larches, Pitch Pines, Greenheart, Morra, Santa Maria, West India Teaks, Rosewood, Ebony, Satinwood, Sabicue, Lignumvitæ, Lancewood Spars, Maples, and *Mahogany*.

Specimens of some of the following woods have been imported into this place, but hitherto the dealers have declined purchasing them, as it has not yet been determined to what purposes they are best adapted ; viz., Sapodillo, Palmetto, Granadillo, the Sapotes, Macayo, Paqui (Ironwood), Quiebra hacha (so called in Spanish, from its turning the edges of the hardest tools), the Euphorbias (one of which yields the Caoutchouc), and Gateado ; besides many Cabinet-making Woods, of beautiful figure, and susceptible of a very high polish, of which only small specimens have been exhibited in England. Colonel Lloyd, in his account of his survey of the Isthmus of Panama, enumerates 97 different species of tropical trees, and designates the uses to which the natives adapt them in house, ship and boat-building, and cabinet-making purposes, the very names of most of which are utterly unknown to the wood trade of this country. It would be, therefore, prudent not to ship any of the last-mentioned woods to this country, until their value and use should have been previously well ascertained.

Near the banks of all the rivers on the high grounds, gigantic Pines and Oaks abound; and, as the streams descend, the majestic Mahogany is seen towering above all other trees,—and it is of this last valuable production and its various uses, that it is proposed more especially to treat, in its many bearings, in the subsequent divisions.

But before doing so, it will be necessary to take a brief survey of the Countries across which the new routes to the Pacific will pass,—as in them, all the above Woods mostly abound; for when these communications are effected, they will be the readiest means by which the valuable products above named will be accessible to all maritime nations.

CHAPTER II.

The countries through which the communications from the Atlantic to the Pacific will be opened. Panama a province of New Granada—Projects for canals, railways, and Macadamized roads—Its dense forests—States of Veragua and Costa Rica—Nicaragua and its lakes, and project of a ship canal to traverse them—distances to be saved thereby in voyages from Europe and America to California—Treaty between the United States and Great Britain, guaranteeing the Independence and neutrality of the Canal to all nations—States of Salvador and Guatemala—rich productions—stupendous forests—ports and rivers—Isthmus of Tehuantepec, used as a road from sea to sea since the conquest of Mexico, chosen by the Spanish Cortes in 1814 *for making a ship canal—Grants by the Mexican Government to Don Josè de Garay—Survey of the Isthmus by Sr. Moro—Company formed in the United States by Don Josè de Garay—Treaty between the United States and Mexico, establishing the neutrality of the passage over the Isthmus of Tehuantepec to all nations—Distances saved in the voyage to California by this transit—Productions—Harbours in the Gulf of Mexico—Chiapas—Tabasco—Yucatan.*

As it has already been observed, the narrow Isthmus of Panama, the State of Nicaragua, and that part of Mexico bordering on the Isthmus of Tehuantepec, are comprised within the limits of the great American Isthmus: and as it is in this favoured region of the Continent that the Mahogany is found in abundance, it is evident that some description of these countries, and the proposed routes of transit across them, which will develope their resources, come peculiarly within the scope of the present observations.

That part of the Isthmus called the Province of Panama, belongs to the State of New Granada. Late explorations to discover the most favourable line for a passage, from sea to sea across it, have proved its general character to be a net work of not very high mountains, with vallies in a few places, approaching to each other with only the difference between them, of from 350 to 600 feet above the level of the sea, and through which it has been proposed to open communications, either by canals, railroads, or common macadamized roads. By the first mode it has been pretty well demonstrated, that nothing can be effected from the want of water to supply a canal at the summit level. A company, formed in the United States, is strenuously engaged in the expectation of being able to form a railway from either Chagres or the Bay of Limon, on the Atlantic side, to the City of Panama on the Pacific. The difficulties chiefly to be overcome, arise from the badness of the harbours of Chagres and Panama, and the want of any shelter or accommodation at the Bay of Limon, which would be a dangerous roadstead without a very costly breakwater; and the lower part of the bay is very shallow; it has not a hut on its shores; nor does it possess a spot at which a boat could land or ship any cargo. The track of a railroad, unless entirely built upon a viaduct, must necessarily in the vallies, be exposed to annual destruction by the tropical torrents, and considerable tunnels would have to be excavated. The most recent accounts say, the natural obstacles are greater than what were at first supposed; yet, in these days of engineering prodigies, from the spirit of enterprize, energy, and perseverance displayed on all occasions by our transatlantic brethren, there is a possibility, that before long their laudable designs will be carried into execution; but whether the speculation will yield sufficient profit to answer the expectations of the Shareholders, is quite a separate question.

The apparently most feasible mode of communication is that proposed in connection with the West India Royal Mail Steam Packet Company, by means of Macadamized carriage roads from Porto Bello to Panama, and two routes have been surveyed with that object. Here the economy and facilities are self-evident, for Porto Bello has one of the finest harbours in the West Indies, with quays and magazines, and contains all the requisites for the accommodation of passengers and goods, with established internal communications. A road could easily surmount hills at any desirable inclination, and admits of zigzags, which railways or tramways do not, by which any elevation can be gained; it would not need tunnels, and, by going over the spines of hills, could not be destroyed by the heavy rains. The distance from Porto Bello to Panama, though a few miles longer than from Chagres, would still be easily accomplished in the daylight of one day and goods and passengers would arrive at their destination with only once being put upon a vehicle, which would not be the case with a railway from Chagres, and certainly the expense of the transit would be much less; so that all things considered, a common carriage road in such a country is to be preferred to a railway, or any tram way. It is more than probable, therefore, that the speculation of the Mail Companies will also be soon put into execution.

All the Engineers who have lately made exact explorations of the territory of Panama, report that the surface in general is covered with dense forests of all the beautiful timber trees already enumerated; and when these three or four projected routes across the country are completed, no doubt will remain that their resources will give rise to a very extended commerce on either hand of them through the ports of Chagres, Limon and Porto Bello on the north; and by that of Panama on the South, to which the products of the West Coasts of America are already being sent in abundance.

The coasts of Veragua and Costa Rica next deserve attention before speaking of Nicaragua; for although no actual speculation is afloat to effect a passage across them by canal or rails, still, as the American Isthmus continues very narrow along them, and their shores both on the Atlantic and Pacific possess deeply indented bays and well sheltered anchorages, these countries will very soon attract general attention from the richness of their productions, the fertility of the soil, and quantity of virgin lands which are inviting to the colonist. It is not possible to imagine that they will continue to be neglected when the routes by Panama and Nicaragua shall have been completed. The present governments of these provinces are in the hands of persons who have avoided the intestine civil wars, which have produced so much misery in the other parts of the late Republic of Central America, and their enlightened policy is reaping its reward in the rapid advancement of their prosperity. Costa Rica possesses in the north, the noble harbour of Boca del Toro at the western extremity of the Archipelago of Chirique, and between this and the river of San Juan in the Mosquito territory, there are some excellent points, such as Salt River, the Ports of Matina and Tortuga, to which produce from the interior is now being sent for Europe. On the Pacific are, the Gulf of Dulce, English harbour, the River Cartago, port Calderas and several others in the fine and secure Gulf of Nicoya. When the proximity of this advantageous position, within the action of the Panama and Nicaragua passages is more truly estimated, commercial men will soon be found giving all due attention to these fine regions, and their superb forests may be quickly rendered subservient to the wants of civilized man. In no part of the world are more encouragements held out for colonists, and they will be not more than twenty days sail from the markets on both sides of the Atlantic.

It has aleady been contemplated to effect a road from Boca del Toro to the Gulf of Dulce in the Pacific; and when the country is somewhat more advanced, there will be no great obstacle to its execution, and that at no very distant day.

NICARAGUA.

This province is now deriving immense importance from its territory, having been selected, for the first experiment, of making a canal to traverse the American Isthmus, of dimensions fit for the passage of large ships. Upon the success of this project depends the problem of the ships of the maritime nations on the shores of the Atlantic, reaching, by its means, the west coast of North America: and thus saving the time, expense, and danger of the dreary navigation round Cape Horn. England would thereby save 6,583 miles in the voyage to San Francisco, in California; New York 9,663 miles, to the same place; and from New Orleans there would be the immense difference of 10,547 miles, as shown in the table, No. 1, of the appendix, and the same relative differences in the voyages would be experienced to all the countries on the west coast of North America

The scheme for this canal commences at the port of Greytown (formerly called San Juan), on the Atlantic, at the entrance to the river of San Juan, in 11° of north latitude. Advantage will be taken of this river for ninety-three miles to the great lake of Nicaragua, its junction with it is 135 feet above the sea level. It does not at present admit of free navigation for any vessel drawing more than three feet water, for it has four long rapids in its course; but the bed of the river will be deepened, or a canal will run parallel with it; ships will then sail upon the great lake about sixty miles, with sufficient depth throughout to a point where there is a strip of land, fifteen miles wide, to be crossed by a cut to the Port of San Juan, on the

Pacific. This would be the shortest route; but as this last part presents a difficulty of a range of hills requiring either a great tunnel or a vast open cutting, the project embraces also another course, which is, to traverse the whole length of the Lake of Nicaragua, ninety miles to enter the adjoining smaller Lake of Leon, which is thirty-five miles long, passing to it up the River Tipitapa twenty miles, and thence by a canal of twenty-nine miles, gradually descending to the Port of Realejo. This last Port is about 660 miles nearer to California than Panama.

An American Company has been occupied these last two years, in a careful survey of the whole country, and has obtained a grant for forming a ship canal from the Government of Nicaragua; and preparations for energetically pursuing the work have been making in all the present year. Of such importance has this undertaking been thought by the United States and Great Britain, that a treaty was negotiated and signed at Washington, in the beginning of this year, by these powers, guaranteeing to the state of Nicaragua, the independence of the territories to be traversed by the canal, which is to be open to all nations for ever, under any circumstances of war, with perfect neutrality within certain limits of the ports at the two extremes: and both parties renounce for ever all projects of forming exclusive Colonies in these territories. The State of Nicaragua also binds itself to admit the ships and subjects of every nation for ever to all the privileges of transit and settlement upon the terms granted to the company for forming the canal, and conforms itself to the treaty stipulations between the United States and Great Britain. This important document is given in the Appendix, No. 2.

As there are naturally no obstacles to the execution of this project, but what engineering skill, backed by the required funds, can vanquish, the advantages that will thereby accrue to the commerce of the world are so apparent, that it would be a mere waste of time to enumerate them.

The Inland Cities, bordering the Lakes, are Nicaragua, Granada and Leon; and besides there are smaller places, whose names figure on the Spanish maps, which naturally will spring into importance with the execution of the Canal. The harbours belonging to Nicaragua, are all on the Pacific side, as no part of the State touches the Atlantic; the port of Greytown being within the jurisdiction of the King of Mosquitia. Realejo has a fine harbour, and is the principal trading point at present for Leon and the interior. The Gulf of Conchagua to the North-west, contains many Islands and facilities for commerce, with rivers running into it rising in the States of Salvador and Honduras, (Spanish,) but with the exception of the interior town of Segovia to the North, and its jurisdiction, the remainder of Nicaragua is almost unknown to Europeans. On all its Eastern boundary are independent Indian tribes of Mosquitia, which never acknowledged, and were never subdued by Spain.

Of course, the forests of all these wild countries will be for many years the first to attract the efforts of civilization, and thus it is strictly within the scope of the present publication, to direct the attention of the Commercial World to them; and to point out to early adventurers how best they can turn these valuable productions to account in this market; and we should be, in that case, not without the presumption, that these suggestions may greatly benefit their undertakings.

Leaving the State of Nicaragua, but a few words shall be said upon the States of San Salvador and Guatemala, which are to the westward of it, bordering on the Pacific.

SALVADOR AND GUATEMALA,

These States, compared with the rest of the late Republic of Central America, contain a more dense population, and are well known; they have long traded with Europe, and during the Spanish dominion, their agricultural Products were in the highest esteem; and their Sugar, Cotton, Cocoa, Indigo, Cochineal, Drugs, Spices and Mineral Products are all of the finest qualities, and are still sought after with avidity by traders; but of late years civil discord has unhappily been the bane of the prosperity of the Country, which, added to the impolicy of exorbitant and prohibitive duties, with the spirit of monopoly and corruption of its administrations, has brought ruin on all classes; to these disorders for the present, there seems no termination, and therefore, little or no development of the resources of these countries can be yet expected. No doubt the general movement caused by the discoveries in California, and what will yet take place, when the neighbouring passages across the American Isthmus are completed, will bring these countries into more peaceful action, and then, the more bulky articles of commerce also, which are produced in these beautiful regions will be available to civilization; then will Mahogany and other fine woods, which have alternately grown and decayed in their forests, be cut in proper season and be transported to America and Europe. The coasts possess many fine harbours and safe roadsteads, but, from the causes above named, few are used by commerce. Mention need only be made of the Gulf of Conchaqua, the Bay of Juchilisco, Puerto de la Libertad, (which communicated with the late federal seat of Government,) ports of Acajulco, Istapa, Suchiltepeque, the river Samala, the ports of Quesaltenango and Soconusco, all on the Pacific ocean.

It is, however, requisite to notice that the state of Guatemala touches the Atlantic in the Gulf of Dulce to the North, and its Eastern boundary forms the Western frontier of the British Settlement of Honduras.

The sources of some of the rivers in this latter, are in Guatemala. The river Sumasinta takes its origin in its mountains, and after traversing the state from S.E. to N.W. enters the Mexican Province of Tabasco and discharges itself into the Gulf of Mexico. The whole length of this river, it has been ascertained, drains a region covered with forests abounding in stupendous Mahogany, Cedar and other Timber trees fit for Shipbuilding, accompanied by every species of Dyewoods. The same description applies to the eastern branch of the Great River of Grijalva, and its tributaries, which rises in Chiapas, and but a few leagues from the Pacific, and after its junction with its Western branch, empties itself into the Gulf of Mexico, at the Bar of Tabasco.

Touching Guatemala to the west is the Mexican province of Chiapas, which possesses no seaport, and the nearest to its capital Cuidad Real, is that of Soconusco, on the Pacific, with which there is some trade from the interior. However the two great rivers of the Sumasinta and the Grijalva, already named, as communicating with the gulf of Mexico, give Chiapas much importance for its hardwoods, which, by their means, can be floated down to the already much frequented Ports of Tabasco and the Laguna de Terminos.

ISTHMUS OF TEHUANTEPEC.

This is the last of the three principal points designated for effecting a passage across the great Isthmus, by which European and American commerce is to have access to the Pacific; and, as very accurate surveys have lately been made of the whole territory, vouching for the inexhaustible sources of the wealth of its forests, as well as its capabilities for producing every other article to be met with in the tropics, no apology is necessary for giving a short account of it in this place, in the persuasion that it will prove of general interest, not only to commercial men, but to all persons who are directing their attention to the momentous changes now bringing into life and activity, the whole of the Western New World.

So soon as the conquest of Mexico had been effected, in 1521, and the configuration of that empire ascertained, it became an object of intense desire with Cortez, to discover a passage across the Continent, by which ships might make the voyage, without interruption, from Europe to India. Several were the expeditions that he sent out on discovery, which ended in the certainty that no such passage existed in his day. He then fixed his attention upon the narrow land of Tehuantepec, of which we are now speaking, as practicable for water communication, but with the limited knowledge of hydraulics, it was not then feasible to surmount elevations by canals. A common mule road was however established from Tehuantepec to the great river of the Coatzacoalcos, and thence by sea to Vera Cruz and the Havanna; and this route continued to be used for 100 years later, as the most easy communication from the Atlantic to the Pacific. The open roadstead of Tehuantepec becoming unsafe for large vessels was superseded: a new route was opened from the City of Mexico to the fine port of Acapulco, on the Pacific; and gradually the spirit of monopoly, which pervaded every commercial institution in Spain, limited the intercourse of trade to one single port in each sea, viz., Vera Cruz and Acapulco. Thus the passage of the Isthmus of Tehuantepec was disused; and scarcely ever thought of, until the Spanish Liberal Cortes of 1814, after maturely examining all the possible routes by which a passage might be effected, decreed that the communication from the Atlantic to the Pacific ocean should be effected *at Tehuantepec by means of a ship canal.* This was decisive as to the preference it gave to this transit over those of Panama or Nicaragua.

At that time, the Spanish Government was already engaged in a struggle with the Mexicans, which at length ended in the year 1821, by the latter obtaining their independence. Since then, civil contests have, more or less, prevented the Mexicans from realizing this passage across the Isthmus; but at length the question was seriously entertained under the Presidency of General Santa Anna: and by a decree of the Mexican Congress, powers and grants were conceded to an enterprising individual, Don Josè de Garay, to form a Company for ultimately cutting a ship canal from the river Coatzacoalcos, on the Gulf of Mexico, to Tehuantepec on the Pacific, but with liberty, in the first instance, to commence with a railway or a common macadamized road.

Don Josè de Garay immediately organised a scientific commission to survey the Isthmus, and entrusted its execution to a talented and experienced Italian engineer, Sr. Moro, from whose able reports, published in London, in 1844, and corrected up to 1846, the details now given are extracted.

The Isthmus of Tehuantepec is wholly in the Republic of Mexico, between the 16° and 18° of north latitude, and extends nearly north and south upon the 94° 30' of west longitude from Greenwich; it has the Gulf of Mexico to the north, and the Pacific Ocean on the south, near to the city of Tehuantepec. A few miles to the eastward of the ancient roadstead are now two large and deep lakes, communicating with the great Ocean by a narrow entrance at Boca Barra. The channel does not admit of large vessels at present, owing to a small sand bank just within the bar, but which could be easily dredged. The navigation of the lakes would then extend over twenty miles with anchorages for the largest fleets, secure from all winds. Next, a canal would have to be dug for fifty miles, and by means of 120 locks, it would surmount the gap in the mountain range, which is 600 feet above the sea level, descending on the northern side to the river Coatzacoalcos, which at no very extravagant expense of labour and money can be rendered navigable for 100 miles to the Gulf of Mexico, Ships of 1,000 tons can now proceed up the river for 34 miles to above the town of Mina-titlan, where formerly the Spanish government had a depôt for collecting Mahogany and Pine Timber, which went to supply the arsenal at the Havana. This depôt was deserted when the revolution of of Mexico commenced. The whole transit from sea to sea, will be one hundred and seventy miles, of which only fifty miles have to be cut for a canal, and some dykes and locks placed on the river. Mr. Moro has proved the proximity of a mountain range 10,000 feet above the the sea, from which copious streams descend sufficient to supply the summit level of the canal by means of a few miles of conduit. This fact at once determines the feasibility of this project, for it is the want of water at the summit level which renders a ship canal hopeless at Panama.

Don Josè de Garay was for some time in England endeavouring to arouse the attention of capitalists to the importance of this enterprise, but failed to do so, as unfortunately his project came before the public at the disastrous epoch of the bubble railway speculations.

But since the marvellous development of the riches of California has inflamed all nations with the desire of having access to its treasures by the shortest possible route, the advantages of the passage by the Isthmus of Tehuantepec are very obvious—and by it the voyage from England to San Francisco, in California, will be shortened 6,950 miles, that from New York by 10,390 miles, and from New Orleans no less than 11,600 miles.

The determination of the Government of the United States, to be foremost in securing the transits over the great Isthmus at Panama and Nicaragua has been already noticed, and therefore it is no matter of surprise, that its attention should have been keenly directed to the passage over the Isthmus of Tehuantepec. Don Josè de Garay, by the apathy and supineness of British capitalists, has been left to engage with our intelligent and enterprising rivals on the other side of the Atlantic; and by making large concessions of his rights to American citizens, contracts have been entered into for the construction of a ship canal to Tehuantepec: and to carry out the same, a macadamized road in the line of the works for the canal, is in the mean time being completed over the Isthmus to the river Coatzacoalcos. The American Government, fully alive to the political and commercial importance of this route, has, on the 23rd of June of this year, entered into treaty stipulations with Mexico, guaranteeing the rights of this contract, and both parties solemnly declare that the territory of this transit shall never be alienated from Mexico, to any power, but shall remain for ever open and neuter, for the benefit of the commerce of all nations. This treaty, which is given in the Appendix, No. 3, is negociated in strict accordance with and upon the same basis, as that concluded in the early part of this year, between the State of Nicaragua, Great Britain, and the United States, in respect to the Ship Canal, the works of which are now commencing in Nicaragua, also, by an American company of adventurers.

But whilst it has been thus endeavoured succinctly to lay before the reader, short accounts of the three projects for opening the highways to California and the Coasts of the Pacific, across the American Isthmus, via Panama, Nicaragua, and Tehuantepec, one or all of which will soon be put into execution, it has not formed any part of the present design to discuss or enter into any of the details of their respective plans, or to remark upon the amount of capital their execution may respectively involve; though not any of them would require a sum equal to what has been expended upon either the Great Western or the London and Birmingham railway. For these details, it suffices to refer to very high authority, and known by the title of "Rockwell's Report to the House of Representatives, in the Thirtieth Congress of the United States," where will be found collected every thing that has been advanced upon these important questions.

It is sufficient, at the present time, to show the immense influence they will assuredly have in turning the attention of enlightened men to the countries themselves, which are to be traversed: and so to stimulate their peaceful colonization and development, and bring their infinite resources into play for the benefit of commerce in general.

It has been already shown that a great extent of the surface of the States, lately forming the Republic of Central America, is covered with vast and dense forests abounding in gigantic trees of every description; and, in addition to this, it has now to be noticed that the provinces of Mexico, which border the Isthmus of Tehuantepec, or are drained by the great river Coatzacoalcos and its numerous powerful tributaries, present the same natural features.

Mr. Moro, the engineer, who surveyed Tehuantepec, cites all anterior authorities, and gives his own testimony to the existence on the high grounds, of Pines, Cedars, and Oaks; and lower down the streams the Mahogany, Guayacan, Rosewood, Ebony, and Gateado are particularly abundant with Dyewoods and Gum trees; and in the plains all productions of the tropics grow in the highest perfection. The tributaries of the Coatzacoalcos descend from the northern flank of the Cordillera, and are the means of communication with Oajaca, (rich in mineral productions); and with Chiapas and Tabasco, already spoken of. Several experimental cargoes of Mahogany from the Coatzacoalcos have already been advantageously disposed of in New York, Havre, and Hamburg, and one was sold in Liverpool last year.

There is a native population of 60,000 souls spread over the Isthmus of Tehuantepec, settled in numerous villages, and possessing large herds of cattle, but the grants to Don Josè de Garay give him all the unoccupied lands for thirty miles on either hand of the line of communication from sea to sea, with full liberty of colonisation for 50 leagues more on each side; and no doubt these privileges will soon be availed of by emigrants preferring these beautiful and prolific countries to the bleak barren crags of the wild inhospitable gold regions of California.

Having now brought the account of the States which form the great American Isthmus, as they extend from Panama to Tehuantepec, to a close, there remains but a word or two to say with respect to the harbours in the Gulf of Mexico, before entering upon the more ample details, which the British Settlement of Honduras, with its protected State of Mosquitia, will require.

The Port of the Coatzacoalcos is, as already said, accessible for vessels of 1000 tons burthen, to ascend the river thirty-four miles to Mina-titlan. To the eastward in the State of Tabasco, are the anchorages of the bar of Santa Ana, Rivers Tupilco, and Victoria de Tabasco. This last is in communication with San Juan Bautista, the capital. The bar of San Pedro is at the mouth of the Sumasinta, and the harbour of the Isla del Carmen, commands the Great Lagoon of Terminos. Next follow in the Peninsula of Yucatan, the Ports of Campeche and Sisal,—which last is the anchorage for Merida the capital. But at present, for want of internal communications, this province has no trade in heavy timber on the side of the Gulf of Mexico. But to the eastward, it possesses the deep Bays of Ascension and Bacalar, with which the Mahogany Cutters of Honduras have had intercourse of late years.

We have now formed the circuit of the coast, and shall proceed, in the next sections, to a description of the British settlement of Honduras, with its dependant protected territory of Mosquitia.

CHAPTER III.

Geographical position—productions—capabilities of the British settlement of Honduras.—The Province of Honduras, one of the States of the late Republic of Central America,—and Mosquitia.

The British Settlement of Honduras is situated on the east side of the Peninsula of Yucatan, between the 18° 30′ and 15° 50′ of north latitude. It has the Mexican Province of Yucatan on its north, its eastern coast extends on the Atlantic from the Rio Hondo to the river Sarstoon, and this last empties itself into the Gulf of Honduras, only 20 miles N.W. of the Gulf of Dulce. The State of Guatemala, of which mention has already been made, bounds it to the west along the line of 90° west longitude; and the Province of Vera Paz, one of the States of the dissolved Republic of Central America, is to the south; and south-east of it is the State of Honduras, reaching to Truxillo, touching upon the Mosquito territory.

It has been in the possession of the British crown for 200 years; the treaties with the Spaniards were broken through, and violated by their governors; and this settlement has been ever successfully defended and held by its inhabitants for Great Britain.

The country for many miles along the sea board is low, and the approach to the coast dangerous, its navigation being intricate amongst the numerous islands and reefs to the eastward of it; but there are good roadsteads in several parts, such as Ambergris Key, towards the north near the Bay of Bacalar: and Turneff and St. George's Keys opposite to and forming the port of Belize, which are safe, commodious, and well protected from the violence of the sea.

The land is low for some miles into the interior, but gradually rises as you advance, and becomes a fine and bold country, covered with immense forests, and in general it has a rich and fertile soil.

This country is intersected with rivers, creeks, and lagoons, of which the principal are the river Hondo, the New River, the Belize, the Siboon, Placentia Harbour, Ycacos and Manati Lagoons, and the rivers Zacatan and Sarstoon, all of which, with several others, are available for the purposes of the Mahogany cutters.

The productions of the forests, as well as of the lands, being nearly the same as have been enumerated in the general descriptions of the great American Isthmus, it is needless to repeat them in this place; and it suffices to say, that the fertile territory of Belize requires only the application of labour and capital to produce them for exportation, in addition to its Mahogany and Dyewoods, which alone were formerly and exclusively permitted to be drawn from the soil.

A few words need only be said upon the late Central American State of Honduras, which occupies the coast line between British Honduras and the Mosquito country.

To the West it touches the State of Guatemala, and commences at the great inlet of the Gulf of Dulce, on which, to the south-eastward, is the settlement and town of Izabal, and not very far from the last are the considerable towns of Acasaguastlan and Chiquimula, on the river Motagua, and by which line of communication, trade is carried on between our possessions and the City of Guatemala, yielding much Cochineal, Indigo, &c., in exchange for British manufactures.

The navigation of the Gulf of Dulce to Izabal, does not permit vessels of any importance to near the shore, yet this is one of the passages that it has been supposed might admit of transit by canal or railroad to the Pacific; but this has been found quite impracticable.

In the deep bight of the Bay of Honduras, there is anchorage in the Gulf of Santo Tomas. Eastward of Cape Tres Puntos, is the good harbour of Omoa. Along the Northern Coast, there are Puerto de Cavallo, the mouths of the rivers Sal, and Manati, and about a dozen smaller streams, with which communications might be established for cutting fine Woods; but the anchorages are not safe for large vessels, and their produce would have to be collected for final shipment at Belize. The town of Truxillo is well situated, with good anchoring ground. In front of this coast are numerous reefs and islands, affording protection for shipping, the principal of which are the considerable islands of Ruatan and Guanaja, containing several fine harbours, and which belong to Great Britain.

This Province, like all the others of Central America, possesses every element for an advantageous commerce, especially with our West India establishments; but unfortunately, it has been for several years past continually involved in the civil contests, which have desolated the neighbouring countries, and at last dissolved the Federal Union of the Central Republic; besides which, its present Rulers have of late manifested a disposition to interrupt our friendly relations with them, and to greatly annoy the peaceful Wood Cutters within the Mosquito Country, to the Eastward of their frontier town of Truxillo. This infringement of Territory has been vigorously repelled by the British Government; and it has demanded and obtained indemnity and security for our traders,—and caused the rights of the King of Mosquitia to be respected.

Mosquitia, commences from Cape Honduras, in 86° West Longitude, not far from the mouth of the river Roman, which last is in Latitude 15° 5′ North, and 85° 42' West Longitude; and the coast line touches the Caribbean Sea, extending as far South as Greytown on the river San Juan de Nicaragua, in North Latitude 11 degrees. Its western boundaries are the Central States of Honduras and Nicaragua, with the new independent State of Costa Rica on the South. It thus comprises an extent of upwards of 550 miles of coast, with numerous fine rivers descending many miles from the interior, with good ports, creeks and lagoons, of which the following are deserving of notice, viz. the Rivers Roman, Tinto, Plantain, Patook, which are on the North coast, from Truxillo to Cape Gracias a Dios, where the great river of Vankes discharges itself; and between this last and Greytown, are, the Rivers Coree, (which descends into Sandy Bay,) the Bracma, the Tongula, Snook, and Great rivers; the Pearl Lagoon, the River of Bluefields, (at the mouth of which is the present residence of the King); and finally, the River San Juan, which is the only issue by which the waters of the Great Lake of Nicaragua are discharged into the Caribbean Sea, at Greytown.

Its Climate is generally good. Its Soil is capable of yielding all tropical products. The interior has been little traversed by Europeans, and it is but thinly inhabited by the aboriginal Indian tribes, who, though the Spaniards laid claim to the country, had never made their submission to them; and Great Britain has ever protected and sustained the independent authority of the native King. The settlement at Cape Gracias a Dios was, for many years, the residence of the King, but of late years, the seat of Government has been transferred to the mouth of the Bluefields. This River is a noble stream, taking its rise in the wild district north of the mountain range which only separates it from the Lake of Nicaragua, and it keeps parallel at not more than 65 miles from the whole course of the projected communication from Greytown to that Lake. When this transit to the Pacific shall have been accomplished, it is manifest, from the bare inspection of the map, of what increased importance the navigation of the Bluefields River will become to the colonization and advancement of this, at present, almost unknown pathless region, covered with primeval forests, abounding in all the tropical trees before enumerated: in addition to which, it is to be noticed that the Savannahs of the Pearl and Bluefields lagoons can furnish an inexhaustible supply of the finest Pitch Pine Timber, some of it fit for the largest masts. The site of the settlement at the mouth of the Bluefields River has been well chosen, as it has a fine spacious harbour protected by a rocky bluff, which, if required, admits of being well fortified.

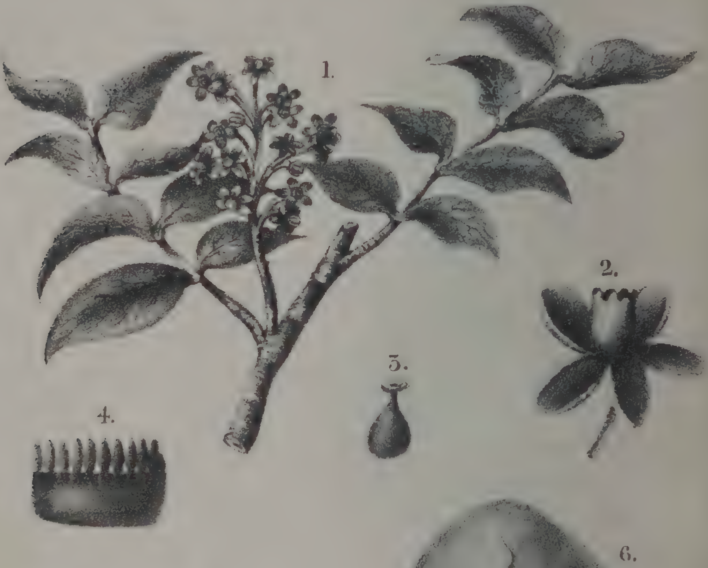
It will be seen by the foregoing brief description of the geographical positions of the countries comprised within the great American Isthmus, how unbounded are the sources of their natural wealth, about to be rendered available to the commerce of the whole world, now that the time has arrived for opening the numerous highways that will traverse them to the shores of the Pacific. For although it is the primary intention of most of the adventurous men emigrating, to proceed to the glittering regions of California, in search of fortune, yet it cannot be doubted that the more prudent, far-seeing, and industrious of their number, will be struck with the natural beauty and fertility of the countries they will be traversing, and content themselves with gathering the harvest ready placed before them, in more genial climes, teeming with every variety of wealth.

It is therefore natural to expect that these various States of Central America will soon be colonized; and that, as a necessary consequence, its forests must be cleared in the very act of opening the communications; but as the timber of these forests is all more or less valuable and useful to man, it will furnish inexhaustible materials for lucrative commerce between the colonists and the mother countries for centuries.

Thus it has been shewn how important are become the above subjects in connection with the supply of timber to Great Britain, for its shipbuilding and household purposes; in which Liverpool more, perhaps, than any other port is interested, since in it, especially of late years, the trade in Mahogany and other fine woods has been greatly extended.

We shall now proceed to particularize, what is indeed the more immediate concern of this present publication, that which relates to the Mahogany tree; its discovery; its description; and how it is most advantageously collected and prepared for its several purposes; with an account of the usages of this port concerning its disposal; all which may prove equally of interest to the general reader, as well as to those more particularly engaged in this branch of business.

Botanical Characters of Mahogani Swietenia.



1. Flower and Leaves.
2. Flower (Enlarged.)
3. Germen.
4. Nectary and Stamens.
5. Seed with Leafy Wing.
6. Fruit of the natural size.

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CHAPTER IV.

History of the Mahogany Tree.—First used by Cortez, for Shipbuilding, about the year 1521*—By Sir W. Raleigh, in* 1597*—By Captain Dampier, in* 1681*—First used in England, for Cabinet-making, in* 1754*—Account of it in Catesby's Natural History,* 1754*, and in St. Pierre's Studies of Nature. Description of the Mahogany Tree, and its Botanical characters—mode of cutting and collecting in British Honduras, and Cuba.*

The Mahogany Tree, from an early period, was used by the Spaniards for Shipbuilding. The first mention of it occurs shortly after the discovery of the New World, when Cortez and his companions, between the years 1521 and 1540, employed it in the construction of the ships which they built for prosecuting their voyages of discovery, after their conquest of Mexico.—*See the Letters of Cortez to the Emperor Charles V.*

In 1597, it was used in the repairs of Sir Walter Raleigh's ships, in the West Indies; and Capt. Dampier, in one of his voyages, in 1681, speaking of Mahogany, or, as it was then called Cedrela or Cedar, says, "it was concluded to go with all our ships to St. Andreas, near the Isle of Providence, and besides, at this Island, we might build canoes, it being plentifully stored with large Cedars, and for this reason, the Jamaica men come hither frequently to build sloops,—Cedar being very fit for building. We reckon the pereagos and canoes, which are built of Cedar, the best of any."

In St. Pierre's "Studies of Nature," it is stated "that on the shores of the Antilles, grows the Mahogany, there called Cedar, on account of its incorruptibility. It grows to such a bulk, that with the trunk of a single tree, they make a boat capable of carrying forty persons."

Catesby, in his work on Natural History, published in 1754, speaks of the excellency of Mahogany for all domestic purposes, and mentions that it is no less esteemed for shipbuilding: "having properties for that use, excelling Oak and all other Woods, viz., durableness, resisting gun shots, and burying the shot without splintering."

Mahogany was first imported into England in its unmanufactured state, in 1724, and it will, perhaps, be interesting to mention the account of its introduction given in Lunan's Hortus Jamaicensus. A few planks, it is related, were sent to Dr. Gibbons, of London, by a brother, who was a West India Captain. The Doctor was erecting a house in King street, Covent Garden, and gave the planks to the workmen who rejected them as being too hard. The Doctor's Cabinet-maker, named Wollaston, was then employed to make a candlebox of them, but as he was sawing up the planks he also complained of the hardness of the timber, but when the candle-box was finished, it outshone in beauty all the Doctor's other furniture, and became an object of curiosity and exhibition. The wood was then taken into favour. Dr. Gibbons had a bureau made of it and the Duchess of Buckingham another, and the despised Mahogany now became an article of luxury, and at the same time raised the fortune of the Cabinet-maker by whom it had at first been so little regarded.

THE MAHOGANY TREE.

It is described as being one of the most majestic and beautiful of trees; its trunk is often 50 feet in length, and 12 feet in diameter, and it divides into so many huge arms, and throws the shade of its shining green leaves over so vast an extent of surface, that a more magnificent or more useful object is not to be met with in the vegetable world. The precise period of its growth is not accurately known; but, as when large, it changes little during the life of a man, the time of its arriving at maturity is probably not less than 200 years.

There are three species of Mahogany, 1st, Swietenia, being the common Mahogany, known to the Wood Trade; 2nd, the Febrifuga, and 3rd, Chloroxylon. The first is a native of the West India Islands, and the Central parts of America. It used formerly to grow in great abundance along the Coast of Jamaica; but having, in process of time, been almost exterminated, it is now only to be seen in the mountainous recesses and inaccessible districts of the Island. It was once also plentiful at the Bahamas, where it grew on the rocks to a great height.

The first species, Mahogani Swietenia, was named after the celebrated Baron Von Swieten, physician to Maria Theresa, Empress of Germany; and the following are its botanical characters:—The class is Decandria Monogynia, Nat. order Trihilatœ of Linneus. Its essential characters are, Calyx 5 cleft, Petals 5, Nectary Cylindrical, bearing the Stamens at its orifice; Capsule 5 celled, woody, opening at the base; seeds very many, imbricate, compressed, oblong, with a leafy wing; leaves, pinnate reclining, alternate shining, numerous on the younger branches; leaflets mostly in four pairs, often three, and but seldom five, without an odd one, lanceolate, quite entire, opposite, 1½ inch long, stalked; panicles corymbose, with about eight flowers in each, small, whitish, occasionally of a reddish or saffron colour. (See the drawing annexed.)

Linneus remarks that the Mahogany tree has a great affinity with Cedrela, (the name by which the Spaniards at the conquest of Mexico knew this tree,) and the capsules are nearly alike, but those of the Cedrela much smaller; the germ and the fruit are also similar. The flower agrees, in many respects, with that of Melia of Jussieu.

The second species, viz., Mahogani Febrifuga, or East India Mahogany, is described as a tree of vast size, growing in the mountainous parts of Central Hindostan, with a lofty straight trunk, covered with a grey scabrous bark, externally reddish, and of bitter astringent flavour; branches numerous, the lower ones spreading, and the upper ascending, leaves alternate, abruptly pinnate, about a foot long, leaflets opposite, stalked obtuse and imarginate; panicle large, terminal diffuse, bearing numerous small inodorous flowers; fruit large, greyish.

The wood is of a dull red colour, and harder and heavier than common Mahogany. The natives of India give it the name of Soymida, and account it the most lasting Timber their country produces, and therefore they employ it in their sacred buildings, and upon every occasion where they wish to combine strength with durability. Dr. Roxburg, the discoverer of this species, states that the bark is superior in virtue to that of the Peruvian, and Dr. Wright, of Jamaica, asserts that its apparent qualities are exactly the same as those of the Mahogany of commerce.

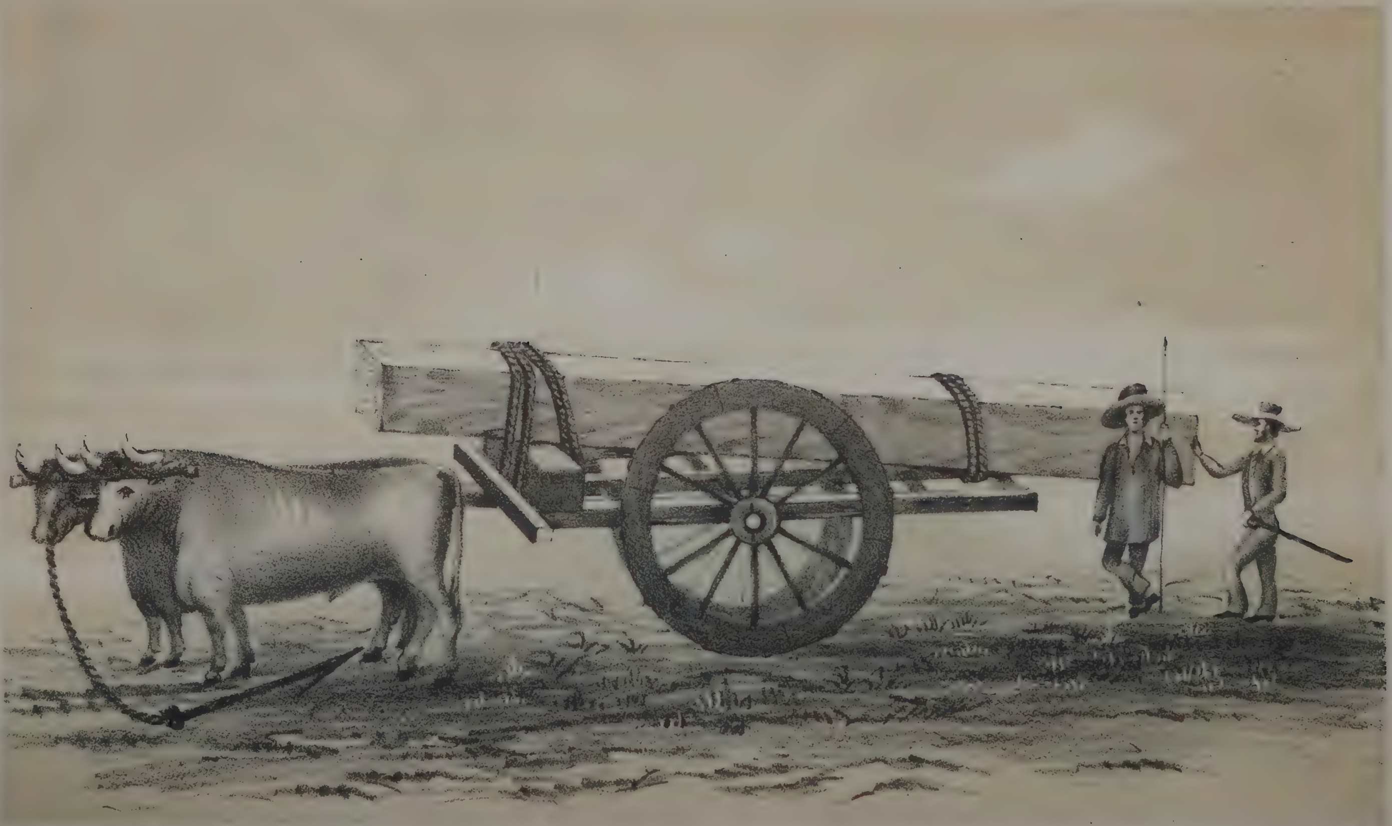
The third species of Mahogany is the Chloroxylon; it is chiefly found in Bengal, and it does not vary materially in its botanical character from species No. 1 and 2; the tree is not so large; the wood is of a deep yellow colour, nearly the same as Boxwood and from which it does not differ much in point of durability.

The foregoing description of the several species of Mahogany are to be found at large in *Rees' Cyclopædia,* article "Swietenia."

MAHOGANY CUTTING IN HONDURAS AND CUBA.

The following is an account of the manner of cutting and shipping the Mahogany in Honduras, given in the Parliamentary Book on the Spanish American Republics, by Mr. Macgregor; and by other authorities.

The season for cutting the Mahogany usually commences about the month of August. Gangs of labourers are employed, consisting of twenty to fifty each, under the direction of a captain, or conductor; each gang has also a person belonging to it termed the huntsman, who is despatched



MILLER & JONES LITHOGRAPHE

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CART OF THE COUNTRY LOADED WITH MAHOGANY IN CUBA.

about the beginning of that month, to search the woods. He cuts his way through the thickest parts of the forest, and climbs the tallest tree he can find, from which he minutely surveys the surrounding country. At this season the leaves of the Mahogany tree are invariably of a yellow reddish hue, and an eye accustomed to this kind of exercise can, at a great distance, discern the places where the wood is most abundant. He now descends, and to such places his steps are directed, without compass or other guide than what observation has imprinted on his recollection, and he seldom fails to reach the exact spot to which he aims. The tree is commonly cut about 10 or 12 feet from the ground, and a stage is erected around it for the axe-men, who are employed in levelling it.

A sufficient number of trees being felled to occupy the gang during the season, they commence opening roads to the nearest river, which operation usually amounts to two-thirds of the labour and expense of bringing the Mahogany to a place of shipment. If the trees are much dispersed, miles of road and many bridges are made towards them. The roads being cleared of all brushwood, hoes, pickaxes and sledge hammers are required to level down the hillocks and break the rocks, and loosen the stumps which impede the wheeled trucks on which the logs are carried.

The roads being formed generally by the end of December, the cross cutting, as it is called, commences; and when the sawing is completed, the logs are placed in whatever position will admit of the largest square being formed according to the shape which the end of each log presents. They are then reduced by means of the axe, from the round or natural form, into the square; although some of the smaller logs are brought out in the round, yet, with the larger description, the making them square is essential, not only to lessen their weight, but also prevent their rolling on the truck or carriage.

In the month of March, all the preparation before described is, or ought to be, completed. This is the dry season or time for drawing the logs from the place of their growth to the river. This can only be carried on in the months of April and May, the ground for all the rest of the year being too soft for heavily laden trucks. The roads are seldom fit for use until the 1st of April, when the Mahogany Cutters harvest may be said to commence, as the result of their work for the season depends upon the continuance of the dry weather.

A gang of forty men is capable of working six trucks; each of which requires seven pair of oxen and two drivers, sixteen men to cut food for the cattle, and twelve to load or put the logs on the carriages. The intense heat of the sun prevents the cattle being worked under its influence, consequently they are obliged to labour in the night instead of the day time. The logs are laid upon the truck by means of a temporary platform, which is laid from the edge of the truck to a sufficient distance upon the ground, so as to make an inclined plane. They are then carried to the river and thrown into it, having been previously marked with each owner's initials.

From the end of May to the middle of June, torrents of water are discharged from the clouds, and the Rivers swell to a great height. The Logs are then floated down, being followed by the gangs in pitpans (a kind of flat-bottomed canoe) to disengage them from the overhanging trees, until they are stopped by a boom placed at some situation convenient to the mouth of the River. Each gang then separates its own cutting by the marks on the ends of the logs, and forms them into large rafts, in which state they are brought down to the wharves of the Proprietors, where they are taken out of the water and undergo a final process of the axe, to make the surface smooth.

The mode of cutting and preparing Mahogany for shipment in the Island of Cuba is as follows:—

The trees are generally purchased from the owners of the land, at prices varying from one to four dollars per tree, according to size; but Wood of large dimensions is now very scarce, except at such a distance from any port of embarkation as to make it improbable that any great quantity could be procured. Mahogany of 14 inches square, and 27 feet and upwards in length, fit for shipbuilding, is obtainable; but Logs of forty to fifty feet are scarce. The tree is rarely met with to give a larger square than 24 to 26 inches, although occasionally trees of very large dimensions are seen.

The quality of the wood is very much better in the open Savana or Prairie, the land of which is dry and stony, but it grows to greater lengths where the forests are dense.

The hewers of the wood are principally white men, and are remarkably sober, but they are idle, and are not much to be depended upon in other respects. The rum of the country is their sovereign remedy for all bruises, wounds, &c. Instead of drinking spirits, they use coffee as strong as it is possible to make it, and the kettle is never off the fire. Their implements, tackle, &c., are very simple, consisting of an axe and a cutlass: trucks and carts are not wanted until after the wood is hauled by oxen.

The cutters proceed to fell the trees in the wane of the moon; for, however strange, it is a fact well known to every woodsman in the island that the Mahogany is then freer from sap, sounder, and of a richer colour than when felled before the full. It is cut throughout the year, but more particularly from October to June, which is the dry season. When the Logs have been prepared, they are drawn by oxen to the edge of the forest by "*Arrastro*," which means by dragging them upon the ground, or "snigging." When a sufficient quantity are hauled together, the logs are then loaded upon carts, and conveyed to the port of embarkation or to the river, as the case may be. Sometimes six or seven, or even ten yoke of oxen are required, according to the size of the log, (see the annexed sketch,) which shews a loaded cart, and the mode of yoking the oxen by the head. To the rope extending from the pole-bar is attached a hooked stick, which is for the second yoke of oxen, and the third pair, and succeeding ones have rope traces of about eighteen feet long; so that when yoked they are in advance of those in their rear about twelve feet; the idea of this is to enable the leading oxen to pass through any bad place in the road, and pull on firm ground when the cart and other oxen are in a deep mud hole.

The Logs are sent down the rivers tied together in threes; but at the rapids they are separated, and passed one by one (see Sketch No. 2): after clearing them they are collected in rafts, and are ready for sale or shipment.

The basis of the measurement of Timber in Cuba is the Spanish Vara of three feet of twelve inches each; being equal to thirty-three English inches to the Spanish Vara. On the south side of the island Mahogany is sold by the 1000 feet superficial measure Spanish; and on the north side it is sold by the "*Vara of dimension*," which means half a vara wide by half a vara deep, and one vara long; this measure, therefore, contains 5 2-10ths. cubic feet or 62 4-10ths. superficial feet English.

It is more profitable to purchase large than small wood, for when its size exceeds that of the "*Vara of dimension*," there is an advantage in the mode of estimating the contents of the excess, which gives one per cent. nearly in favour of the buyer upon the total of his purchase.

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CHAPTER V.

On the use of Mahogany for Shipbuilding, Church and House Building, Machinery, Railway, &c., Carriages, Dock Gates, Carving, and other purposes.

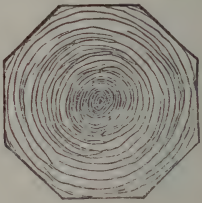
Until the discovery of Mahogany, the Oak was considered to be the "Monarch of the Forest Trees;" and although, from old associations, it is still regarded with veneration, and justly prized as constituting the chief ornament of the landscape scenery of this country, yet, in point of usefulness, size and grandeur of appearance, it is far inferior to Mahogany, the beauty and many excellencies of which, combined with its cheapness and wonderful durability, render it the best material which can be employed for numerous important purposes, which will be referred to in the following observations: first, as regards it use for

SHIPBUILDING.

Honduras Mahogany is that which is generally imported for Shipbuilding, on account of the Logs being of sufficient lengths, and pieces of every curve required being readily procured on the Mainland; but that from the Islands is peculiarly fit for this purpose also, when obtainable of similar dimensions.

Great care should be taken to fell the trees at the proper time—which the wood cutters assert ought to be during the wane of the moon; for otherwise, they are of opinion that the durablity, and colour of the wood, are prejudicially affected if this be not practised. The longer the logs can be obtained, the more valuable they will be for planking, &c. If attention be paid to adapting the trees in the forest for Shipbuilding dimensions, this wood can be had of finer sizes, cheaper, and freighted home for less money than any other kind of high class timber. It is not advisable to cut up Mahogany for planks before shipment; but if it be a matter of economy not altogether to lose the available part of a tree, then the planks ought not to be less than 8 to 10 inches in thickness, and as long as possible, say not under 27 feet.

As it is difficult for the Shipbuilder to distinguish in *young Timber* between the sap and the wood, it is possible that if the logs were sent in an octagular form, thus



there would be little risk of their being shipped with the sap on, as is sometimes the case, and which having been used in shipbuilding through inexperience, has been the means of affording the pretext that Mahogany is liable to the dry rot, but which is not true, as respects properly selected wood; ample proof of which was produced before the Lloyd's Committee of classification in the year 1846, as is fully set out in the documents given at length in the Appendix No. 4, and to which the reader is especially referred. A very undue advantage has now been taken by the same Committee on the 14th March of this present year, to further exclude from a ship of the 12 years' grade, all Mahogany without distinction for the timbering of 3rd futtocks and top-timbers, the main keelson, and in the table of planking, from the light water-mark and wales; and also from the top sides, in consequence of a few instances of sappy and improperly selected Mahogany having been found decayed. But it must be obvious that a similar objection would equally apply against East India Teak, British or African Oak, or any other Timber, if young and sappy wood were to be put into a ship, as may be seen every now and then in the Graving Docks; the objection in reality being, not against the wood, but the judgment of the persons who ought not to have permitted its introduction in its immature state.

Since Mahogany has become one of the chief Shipbuilding Timbers, and as the advantageous position of Liverpool has rendered it so large a depot for that Wood, it is necessary here to offer some remarks illustrative of its advantages for Shipbuilding purposes.

Mahogany possesses the important and invaluable properties of great buoyancy and durability, slowness of ignition, and non-shrinkage, as well as being almost totally free from dry rot, and pernicious acids; it is consequently peculiarly adapted for the frames and planking of Steam Vessels, as it resists every change of temperature, and does not warp or shrink from excessive heat, or expand from saturation

When it is considered that the British flag is borne on every sea, and that our trade is principally carried on in hot climates, the advantage of ships being built of a material which combines within itself the best properties of other Woods is surely obvious, and needs no comment: more especially since the Shipping Interests of Great Britain have not increased in regard of British-built Ships, in the same ratio with many of the Mercantile Navies of other Countries, and but for the *Colonial* built tonnage, would have been superseded in some important branches of the Carrying Trade. But where Shipbuilders can still hold their ground in competition with all Foreigners, is in the construction of first-class ships for long voyages to and from India, for all heavy trades, and for the conveyance of Mails, Passengers, and Emigrants, to distant Colonies. This more particularly applies to the increased use and demand for Steamers, of the largest and first-class; and, as the engines of this country are superior to those of Foreign Nations, the British Shipowners and Builders, possessing in these respects so many advantages, they surely have a right to demand from Lloyd's Committee that the same rules should be applied to Mahogany as to other high-class Woods, as the refusal of its admission for all parts of a first-class ship operates to restrict employment in Shipbuilding at home, and tends to sustain at an exorbitant price other high-class woods intrinsically not superior to Mahogany; thus, instead of transferring the Shipbuilding Trade to the Colonies or to Foreign Powers, there would be, with wise legislation, and judicious rules, nothing to apprehend from the rivalry of other countries.

Honduras Mahogany is found to work as freely and bend as readily as English Oak, as may be ascertained by inspecting some of the fine ships now being built, practically demonstrating, that it can be turned round the most difficult curves, without any symptoms of "spalling," or splitting. It has been shewn by a series of experiments, made by Messrs. Thos. and John White, Shipbuilders, of Cowes that Honduras Mahogany is stiffer than either East India Teak, English Oak, Quebec Oak, American Elm, Dantzic Fir, or American Yellow Pine, and that "it is the best Wood for Shipbuilding purposes." See Appendix, No. 4. The non-corrosion of metals is likewise a highly favourable property in this Wood, and this has been ascertained by the celebrated chemist, Dr. Ure, who, having tested samples of Honduras Mahogany which had been submitted for analysis, reported that "A decoction of the chips or shavings had hardly any chemical reaction, and scarcely affected iron and copper;" and, as a case in point, it is known that when the old Spanish Frigate, Princesa, built of Mahogany, was taken to pieces, so sound and tenacious were her *iron* fastenings, that the men were paid double wages for extracting the bolts.

The Mahogany, which is the best adapted for Shipbuilding, is that which is firm, tough and roey, by which latter term is meant the irregular direction, or overlapping of the grain of the Wood: the soft or cedar-like kinds being useful for the Inside Planking, whilst the hard and wavy are suited for the Outside Planking and Timbering. These different properties were well understood by the Spanish Shipbuilders, who, by judiciously selecting such Logs as were of suitable texture, succeeded in building Ships, some of which, even at the present day, are in commission in our Navy, or when broken up from age, have had their Mahogany Timbers used in new Ships.

Nor let it be supposed that the Spaniards cut Mahogany in their Islands alone; their archives attest that very much Wood, cut on the Continent of America, was sent for the use of the Spanish Navy to the arsenal in Cuba. *See Moro, Survey of the Isthmus of Tehuantepec.*

Indeed the botanical character of Mahogany is essentially the same, whether grown on the Continent or on the Islands of Cuba or St. Domingo. A superficial observer may not have skill in discriminating beyond the formation and soundness of Wood, (which are the chief essentials in English Oak, it being of nearly uniform texture,) but if the judgment of the Surveyor be not matured so as to appreciate the useful and varied texture of Mahogany, in order to apply it practically to the purposes for which it is best suited, injustice is done to the Wood and injury to the trade and best interest of the country. The opinions of eminent Shipbuilders are, that sound, hard and well selected Honduras Mahogany is suited for all parts of new "twelve years' Merchant Ships," and if long and well squared-it is very economical, the *offal* being of much more value than that of any other Wood at present used for Ship-building." See Appendix, No. 4

The specific gravity of seasoned Honduras Mahogany being less than that of Oak and Teak, it is calculated that a vessel of 1000 tons burthen, built of it would displace, when afloat, nearly 100 tons of water less than if constructed of the latter Woods: and, as buoyancy is one of the highest qualities in a ship, this characteristic feature ought to have much weight with those who are desirous of producing the best specimens of Naval Architecture. See Appendix, No. 5. Its durability is so well known, that it scarcely requires further comment, than to observe that in Household Furniture, in the old Spanish Ships of War, and in the Droghers and Vessels of the countries in which it grows, its imperishable nature is attested by the most incontrovertible evidence. Instances, in which ships built of English Oak have been found decayed and dry rotten, are unfortunately too numerous, and many Merchant Vessels, as well as Men of War, constructed of this celebrated Timber, have been rendered nearly valueless from the cause above mentioned, before they had been three years at sea; whilst on the other hand, it is an undoubted fact, that owing to the enduring properties of Mahogany, it not unfrequently occurs in those countries in which it grows, that the Oak Timbers of a Ship, from decay, are obliged to be taken out and replaced by that Wood; and, likewise, it has been discovered, that in the same Ships in which Mahogany, Oak and Teak had been used, the Mahogany was quite sound, whilst the other Woods alongside of it were decayed. In fact, as high-class ships are principally employed in Tropical Countries, and exposed to great heat, it is only reasonable to conclude, that the best material to build them of, is the Timber produced in congenial climates—it being notorious that Hard Woods in general, and Mahogany in particular, which are grown in Tropical Countries, are hardly subject to dry rot; whilst, on the contrary, those Woods which are the production of a cold Northern climate, have a greater tendency to decay.

To Shipowners, the purchase of Ships built of Mahogany, in preference to other Woods, has this important consideration; for however ancient or worn such Ships may become, the intrinsic value of old Mahogany to Shipbreakers will be much greater than any other Wood; and Cabinet-makers will frequently give very high prices for old seasoned Mahogany. It is a curious and interesting fact, that Furniture is being made in the Royal Dockyards at this day, out of the beautiful Mahogany found in breaking up the old line of battle ship, the Gibraltar, which was built in the Havana 100 years ago! In respect of this vessel, it is mentioned in the Memoirs of Admiral Sir Jahleel Brenton, "that when he was First Lieutenant of the Gibraltar, (a huge three decker,) he narrowly escaped, having been driven on an iron-bound coast during a fearful gale of wind which had forced her from her moorings, and he suggests that all efforts might have been fruitless, unless the vessel had been of very singular construction, viz: "Spanish built, with her lower part *one enormous mass of solid Mahogany.*"

Shipbuilders, in addition to the numerous advantages that have been suggested, occasionally purchase very fine pieces in their lotted parcels, which, if resold to the Cabinet-maker, or Veneer Merchant, will command a profit, and thus reduce the cost per load of the bulk of their original invoice.

In the Appendix, No. 4, is given in full, the ample testimony of Officers in Her Majesty's service, of Shipowners and Builders, and other unimpeachable authorities, as to the various good qualities and properties which it is asserted in the text, Mahogany possesses, and which should entitle it to be inserted as one of the first class building timbers in Lloyd's Tables; subject only to the same rigid examination by its surveyors, as it is presumed, is practised by them, when Oak or any other timber is put into a ship.

Ships built of Mahogany are, besides, not liable to be splintered by shot; and it is well known that nearly as many men have sometimes been killed in action by the splinters, as by the ball itself.

CHURCHES.

In Churches, Mahogany is extensively used for pulpits, altar rails, screens, benches, &c. It entirely economises paint; so that its cost will not, in the end, be more than that of other woods; and the plainer, and consequently, the cheaper kinds are the best adapted for these purposes. The richness and warmth of its colour peculiarly suit it for the decoration of Sacred Edifices, and particularly so where carving is required. It may fairly be urged that Mahogany has been too long neglected, and ought to be brought prominently forward in all public buildings, where beauty and splendour, as well as durability, are appropriate.

CARVING.

The taste for Oak carving was formed in the earlier ages, when Mahogany was unknown; but now, instead of English Oak, many of the most inferior and spurious descriptions of Continental Oaks are continually substituted, for instance, Dutch and Prussian, (which are refused a classification in the best merchant ships.) Mahogany is found to be better adapted to the chisel, and works more freely than Oak; it acquires a deep rich tone of colour in a few years, whereas nearly half a century will elapse before Oak obtains that rich brown appearance which constitutes its chief attraction. It has, besides, an important advantage over Oak, in large carvings and for statuary, from its being capable of being brought to a much higher degree of polished surface, very closely resembling that of marble; but it should be carefully polished before the varnish is put on. Many works of art are now being executed of it.

FOR HOUSE-BUILDING AND OTHER DOMESTIC PURPOSES.

Mahogany is preferable to any other kind of wood for hand-rails, sashes, shutters, Venetian blinds, drawing boards, counter tops, water closets, sign boards, shop fronts, flooring boards, staircases, frames, scutlings, wainscoting, architraves, and for doors of every kind, especially for the entrance, as may be seen at the Banking House of Messrs. Hoare and Co., Fleet street, and the Hall of Commerce, and many private residences, &c., which retain their rich colour, notwithstanding their exposure to weather and to the City of London smoke.

The substitution of Mahogany for those woods which require paint, is strongly recommended, as well for health and comfort as for safety. From its not containing turpentine or the inflammable matter of most other woods, it is difficult to ignite, and burns slowly. Another recommendation which it possesses for House-building, arises from its not being liable to dry rot; for since the walls of all new houses contain much moisture, it often occurs that the Fir and even Oak Timbers which are used in them, have to be taken out and replaced by fresh ones, whereas, if Mahogany had been employed, this would not have been requisite.

PIANO-FORTES.

The extensive manufacture of Pianofortes has much increased the demand for Mahogany. The instruments, as made in England, are superior to those in any other part of Europe, and English Piano-fortes are largely exported to every quarter of the globe. Beauty of form is a point of great importance; for although this circumstance adds nothing, of course, to the power of the instrument, yet it is of consequence to the maker to give the most elegant appearance to the article in which he deals. Mahogany is particularly to be recommended in this manufacture from not containing acids injurions to metals, as well as from its non-shrinkage, which are invaluable properties in this delicate instrument.

FOR MACHINERY.

For this the soft kind of long grained Honduras Mahogany is well suited, as it is economical, works freely, and does not warp with heat. The consumption for this purpose has very largely increased of late years.

FOR COUNTER TOPS—Honduras Mahogany is the most suitable. The Logs should have good figure, and should not be under 2 feet in breadth, with good lengths, say 12 feet and upwards.

FOR RAILWAY CARRIAGES AND COACH PANNELS—The cheaper kinds of plain Mahogany have been brought into great consumption, which is daily increasing; and it is economical from dispensing with paint.

TO CHRONOMETER, ASTRONOMICAL, AND SURVEYING INSTRUMENT MAKERS—Mahogany has long been well known and appreciated for these purposes, from its exemption from shrinkage or splitting in the sun, or from variation of temperature, and from its non-corrosion of metals.

HERALDIC PAINTERS have, for similar reasons, always given the preference to Mahogany for their panels exposed to the open air.

DOCK GATES.—The opinion of John Hartley, Esq., the Surveyor for the Liverpool Dock Estate, is as follows, viz.: "As respects the durability of Mahogany for Dock and Ship-building purposes, I think that many of the varieties of Mahogany are at least equal to English Oak; and, being free from the strong acidity contained in the English Oak, is less prejudicial to iron work connected with them."

"I have bought all the Mahogany I could meet with of suitable quality and dimensions, which I have used in the construction of Dock Gates, and regret that larger quantities of longer dimensions are not imported."

CHAPTER VI.

Remarks on the selection, qualities, and dimensions of Mahogany—Mode of measurement and sale in the Port of Liverpool, &c. Table of Imports of Mahogany into the United Kingdom, and into Liverpool, with remarks thereon.

To the Importers of Mahogany, it is of the first consequence that attention be paid to soundness, quality, colour, figure, dimensions, defects and manufacture, therefore the following remarks will be classed under these heads; and it is to be hoped, that, attentive observation of them will go far in supplying the absence of practical judgment, and enable the shipper to avoid the injury he might otherwise sustain.

SOUNDNESS.

By which is meant a freedom from shakes, inbarks and similar defects. Special attention should be paid to the Logs being sound, because of the established custom of this Port to make ample and even excessive allowance in measuring unsound and faulty Logs. The Buyer, therefore, is not charged with a large portion, even exclusive of the defect, whilst the Importers must pay freight for the same, as though the whole were perfectly sound; consequently, rather than put on board a defective or shaken ended piece, it would be better to cut off the faulty part. The exception to this rule is, when the Log is a fine figured piece, fit for veneers, in which case the shake, or the defect, might not be so detrimental.

QUALITY.

The beauty of Mahogany arises from its being cross-grained, or presenting the fibres endways or obliquely, on the surface,—these positions of the fibres, as well as their different colours, give a clouded and mottled variety to the surface; and when some of the parts are partially transparent, they give rise to a variety of lights and shades, as the observer shifts his place, and reflect them in the most varied manner, like the surface of a crystal. This overlapping of the fibres, and their varied colours, are the occasion of the singular appearance which the surface of a dining table will present to two persons when seated opposite to each other. From one side of the table portions will seem to be quite light, but in the same seen from an opposite point of view, the contrary effect of deep shade will be produced; and this is the reason why no painter can correctly imitate Mahogany.

Quality, or the grain of the Wood, is of the highest importance. Good quality consists in the Wood being close in the grain, and of firm texture, or fine, and free in the working, in contra-distinction to a coarse, harsh, or brittle hardness; and bad quality is when the grain is porous, and of a grey or smutty appearance. The quality is materially influenced by the soil on which the tree grows, a matter worthy of attentive observation by those occupied in this trade. Logs produced from low, marshy soils are much less figured than those from the more elevated and rocky districts.

COLOUR.

Mahogany is defective in colour when its paleness approaches to that of Fir or Pine Timber; and is too highly coloured when of a deep red. It is of a good colour when between these two extremes and is accompanied by a bright ruby appearance. The lighter Mahogany (but not pale) is preferable, unless indeed the high colour has much life, or brightness. The Wood from the City of St. Domingo is usually the most valuable, and it is chiefly of high ruby colour.

FIGURE.

Figure is mostly divided into two kinds—roe or shade, and mottle.

Roe, is that alternate streak or flake of light and shade running with the grain, or from end to end of the Log. If the streak be regular in size and unbroken, it is thought little of; but if the flakes be broad, and the light and dark parts have a tendency to blend, yet strongly contrast, and are variedly broken in their progress, then it is considered fine.

Mottle, is that mark in the wood which, in a polished board, at first view, appears like something raised upon the surface, and a person not unfrequently feels if it be smooth. It is varied in form so much, that many names have been used to designate its several kinds, of which the following are some. Stop mottle chiefly arises from angular grain, and is in broad flashes, frequently diverging from a centre like the foot of a bird, in contradistinction to Fiddle mottle, which runs in nearly even streaks, as you see on the back of a fiddle, and Rain mottle is somewhat similar to Fiddle, only it is in larger and longer marks. As these two kinds are rarely found except near the surface, much cutting may destroy or diminish them. Stop mottle is the most esteemed, and when united with broad roe, accompanied by fine quality and good colour, constitutes the highest perfection of Mahogany. Mottle runs ever across the grain. However beautiful in itself, mottle should always be in union with shade, to produce that stop roe and mottle figure so much valued. There are also the Plum and the Peacock mottle; this last resembles the tail of the bird.

DIMENSIONS.

Part of this division of the subject runs into manufacture of the Logs for shipment, and part into the customary measurement of this port; a few suggestions will therefore be given as to the lengths and sizes most suitable for importation, and the attention of the shipper will likewise be called to the figure, &c., of such Logs as are convertible to the following purposes:

FOR THE CABINET-MAKERS.

Dining-table, or what is more commonly called Table Wood, is amongst the more useful and valuable portion of a cargo. Supposing the Logs to be large enough for tables, yet, without quality, colour, and figure, they will only be adapted for chairs, &c.

Dining-tables are made in lengths from 4 feet 6 inches to 5 feet 6 inches by 22 inches to 30 inches; consequently no Log of this character should be less than 5 feet in length, and not under 22 inches in depth; and the longer a Log is the better; 9 feet 6 inches, 10 feet 6 inches, to cut to two lengths, and 16 feet, to 19 feet, to cut into three and four pieces, are good lengths. Suppose a Log 5 feet long to be adapted for tables, it frequently occurs that, when opened, it will be found to be a little shaken, at one or both ends, however sound it may have appeared, and should there be shakes in the Log before it is opened, probably not a table board will be got out of it. In a long length, the chances of injury arising from shake are greatly diminished, because a few inches may not be inconveniently spared. A saleable cargo of Cuba and St. Domingo wood will consist principally of table Logs and Curls, with a fair proportion of veneer Logs. It is of importance that these observations be attended to, as the demand for Table Wood is more extensive than for any other purpose.

Fig. 3.

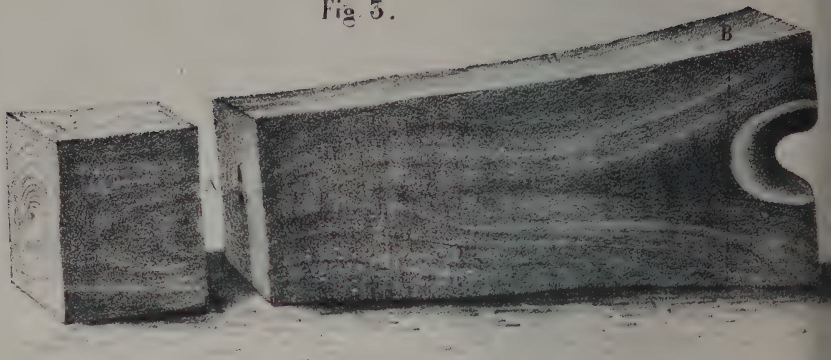


Fig. 4.

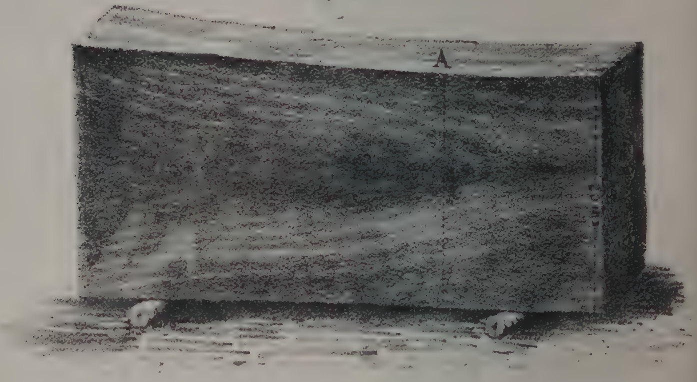
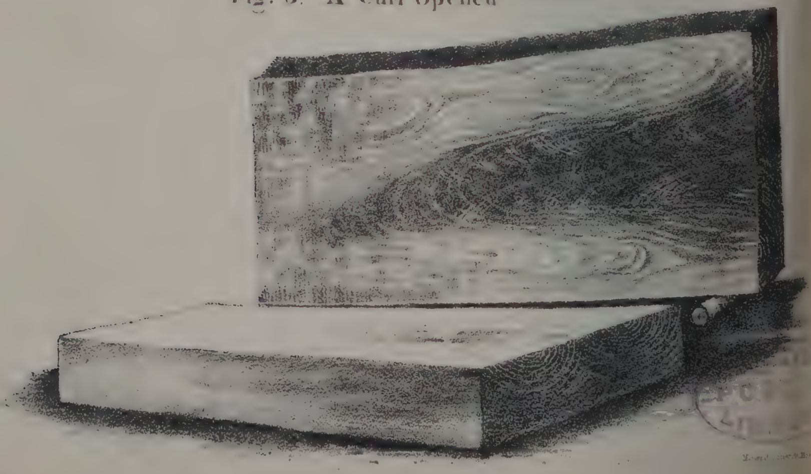


Fig. 5. A Curl opened



Pembroke tables are made 3 feet 6 inches long, by 21 and 22 inches. The same remarks, as made above, with regard to length, will apply here. Quality, colour, and figure are also requisite, though in a somewhat less degree than in dining-table Wood, and as a less diameter will do, this is to be considered the leading distinction between them.

Chair and Hand-rail, or Joiners' Logs.—Less attention may be requisite to the size, in consideration that it is the plainer Wood which is applied to these purposes; although short lengths will come into use, it is better that the Logs should not be less than 9 feet, and the harder description being applicable for chairs, the width should not be under 15 inches, but, of course, the wider the better; lengths of 7 feet 6 inches, 8 feet, and 8 feet 6 inches, in Logs of less diameter, come in for bed pillars, and longer lengths for hand-rails.

A Curl is that part of the stem of a tree where the hearts of the branches commence forming, and continue upwards still solidly united. The solid top is then to be cross-cut below where the branches separate and come out, taking care not to leave any inbark at the head of the curl; so that, when perfect, it has the shape of a truncated pyramid, and not that of a **Y**.

Curls, or Feathers as they are also called, are the exception to the value of long over short Logs. Curls are usually accompanied by plain Wood, and although this is less the case in those from the City of St. Domingo, it may be acted on as a general rule never to burthen the curl part with common Wood, as it lessens its value; and if the Wood be very finely figured the curl will then act as a drawback on the veneer part. The more richly mottled Logs rarely open with sound or good curl: they should be straight, as a bend in a curl is much more prejudicial than in a log. The best lengths are 3 feet, 3 feet 6 inches, 4 feet, 4 feet 6 inches, and 5 feet, unless where the centres, at the crutch, being unusually wide, give reasonable ground to expect a long length of curl—valuable for wardrobes—and then 7 feet may be a termination of the Feather; pieces with two hearts discernible at the butt, afford the best evidence of their being valuable; and as the veneer part of the Curl is confined to that which lies between the two hearts, the best rule in adapting the length is to cross-cut, as nearly as can be ascertained, at the point where the two hearts run into one, as at A in figure 1. In point of value, Saint Domingo Curls rank after table and veneer Logs.

Veneer Logs.—The lengths of these should be determined by their diameters: if from 19 to 24 inches wide, 6 feet 6 inches, and upwards, are good lengths. If 27 inches wide, 9 feet 6 inches long; and if 30 inches wide, 10 feet 6 inches long. Long lengths are always valuable, but the dimensions are of less consequence than in table Wood. A veneer Log cannot easily be described, it is also difficult to select, and only a practical judge can properly discriminate it; being that which chiefly gives a high value to a cargo, no opportunity should be neglected of securing such. The ends of good or veneer Logs are the best criterions by which to judge; the roe or shade always—and sometimes the mottle—being discernible in them: the roe by a strong, deep, bright colour, and the mottle by faint flakes, running from near the centre to the outside. Should these indications fall off towards the heart or centre of a Log, the rich or veneer Wood will be confined chiefly to the outer side of the piece. Well chosen Logs will command a high rate in this market; 12s. to 18s. per foot, superficial, has been occasionally paid.

DEFECTS.

These call for the very particular notice of the superintendent of a cargo for shipment, since they too often render Mahogany useless. They are—Sap or that whitish

Fig. 6

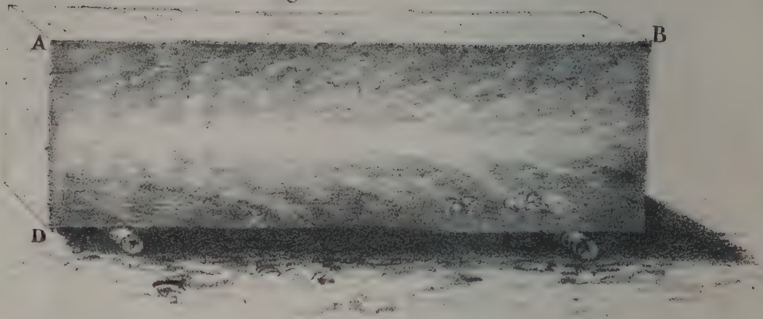
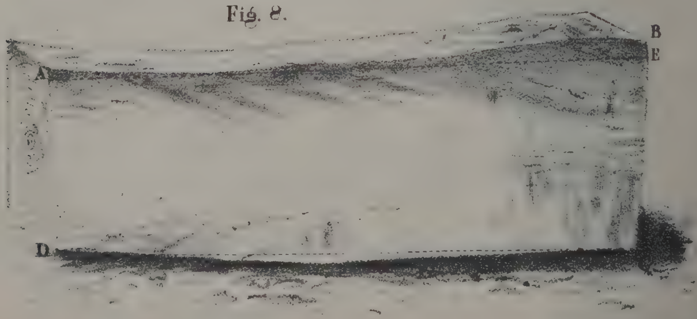


Fig. 7.

Fig. 8.



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yellow outside coat of the tree, next the bark. Inbark, or gall, which very generally attaches to Curls, and arises from the two centres forming the curl never having perfectly united, except perhaps at short intervals; and the least appearance of bark imbedded at the top, or at the butt, renders it valueless, as a curl. Knots, both large and small, the first being often accompanied with much dead wood; of course a sound knot is less prejudicial than a decayed one, and this kind of defect does less injury on the edge than on the side of the Log. Stain which is seen occasionally over some parts of the Log; and List, which is far more common, and is that long streak of stain, running with the grain of the wood, like straight roe, only of a dingy or dark colour. Doted, is when the whole, or greater part of the Log, puts on the appearance of want of life, as if the tree had been fast decaying, or perhaps was quite dead when cut down. Cork centre, is that soft, pale, or spungy appearance, which indicates extreme softness in the wood, and frequently extends considerably round the heart. Worm holes are very injurious, particularly when they appear near the heart; if merely in the sap or edge, they are less prejudicial.

MANUFACTURE.

It is recommended that the *choicest* pieces be sent in the round, as the necessity of squaring logs of Mahogany, to meet high duties no longer exists; and any loss in measurement would be compensated in price; the bark and sap should be taken off, and the ends be well butted by the saw; generally speaking, the longer they can be obtained, the greater will be their value. All very fine Mahogany should come in this shape, as the most valuable part of such wood is cut away and lost in squaring it.

In London and Liverpool, every log is examined and valued in some degree, in respect of its having much or little plain wood at the heart. Imagine the wood cut off the sides of a veneer piece, which sells here perhaps from five shillings to fifteen shillings per superficial foot, whilst the freight on it if left uncut, would not be more than ½d per foot, the wood thus destroyed being nearly worth as much as what remains in the log.

Attention to the manufacture of squared logs is of great importance: the question always asked, as to the measurement for sale is, "what will the log work to?" and beyond this, nothing is allowed; it is, therefore, most essential that all superfluities should be retrenched before shipment, being so much dead loss to the Importer, as already expressed under the head of soundness.

In squared Logs, each of the four sides should correspond exactly with its opposite one, and be parallel to it; and each of the ends should also correspond with the other, and always be at right angles to the side.

Thus, in figure 6, the Log A B C D represents one of the above description, and the whole of its contents would be allowed in measuring; but, as in figure 7, had A F C E been the shape, it would only have worked into the former figure, A B C D, consequently the two ends, A D F, B C E, are superfluities.

Again, if the Log taper, as in figure 8, and the side end A D be less than the end B C, so that the former squares, suppose 20 inches, and the latter 24 inches, the Log will only work so as to square 20 inches; A E B is therefore a superfluity.

The loss in the measurement of long tapering logs is very great; for instance, if a log be 27 feet long, and much larger at the butt than at the top, it would be measured 18 inches from the small end, as represented by the dotted lines in the figure, No. 9: but, to obviate this loss, the log should be cut as represented in figure 10, when it would be measured in three lengths, instead of only in one.

Fig. 10.

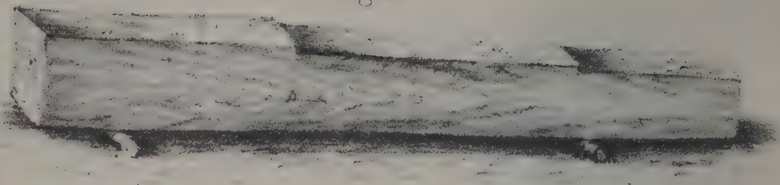


Fig. 9.

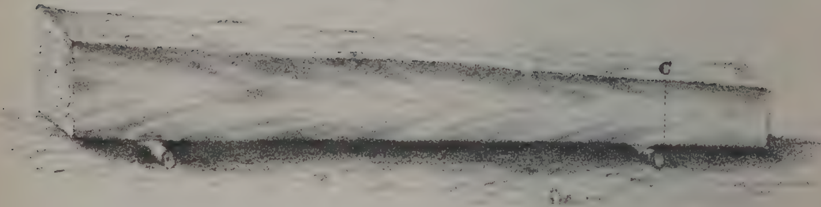
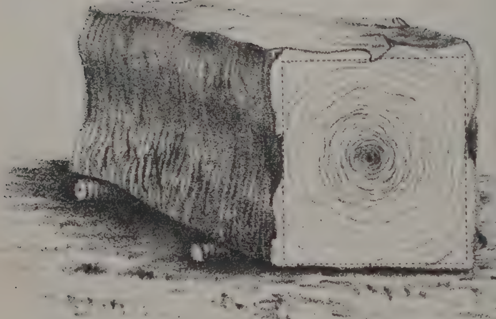


Fig. 11.



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If the stem of a tree be not round, then the shape of a brick is the best model for a Log. Care must be taken to keep from wane, by which is meant when the edges fall off from being perfectly square; for should the Log be narrow at such part, and the wane be more than about 18 inches from the end, the measure is taken there, as in the following figure 11. To this rule of the sides of Logs being perfectly parallel, Curls form an exception; when tapering, they are measured in depth one-third from the butt, or narrow end, as at A in figure 4; but the thickness is taken in the smallest part of the narrow edge, as in Logs. The top should be without fork or wane, since this is a superfluity, and consequently disallowed in the measurement, as at B in figure 3. Figure 4 is a model of a Curl.

The chopping or adzing of Logs has been resorted to for the purpose of giving an appearance of figure; but it is very objectionable; this effect is not produced, and it only operates against the measure, because of the extra allowance required to be made to cover the defect of such irregularity of surface. It will be seen in figure 11 that the hollow sides, sometimes thus produced, call for an allowance, as well as the chopping. It would be carrying the above principle, regarding wane, too far, to act upon it strictly in crooked Logs. They are more disadvantageous for stowage than for measurement; but their sides must be even. The principle of measurement, for the length, is to draw a straight line between the ends, and not to carry it round the bend. It must be also observed, that in all Logs the sap should be entirely cut away; for this, and particularly for shaken ends, extra allowances are made in the measurement.

It is advisable, also, that all Logs should exceed, by not less than two inches, the length for which they are intended, as no shorter measure than half a foot is recognised; they lose the half foot if they fall short of it, even by less than a quarter of an inch, which is frequently found to be the case at the shortest corners, from the ends of the Log not being cut off square, or at right angles with the sides. It should also be borne in mind, that the Logs should be cut according to the above directions in the *first* instance. *Trimming* gives wood a dead or dull exterior—prevents some of its better properties being seen—and consequently prejudices the sale.

MEASUREMENT OF THE PORT OF LIVERPOOL.

In measuring, it is the custom to allow one-eighth in every inch on thickness as well as depth, or 12½ per cent. diameter each way, so that the difference between the extreme measurement, at the place of shipment, and the measurement for sale, cannot be less than 25 per cent., exclusive of other allowances for round-edged, decayed, shaken ended, or taper logs; therefore a cargo shipped strictly in accordance with these instructions, would not lose for sale more than 25 per cent. off the freight or extreme measurement, but unless these remarks are attended to by the shipper, the additional falling off will be from 2½ to 7½ per cent. In round numbers, the sale measure, as compared with the freight measure, may be rated as in the proportion of 2 to 3, that is to say, one-third off the latter gives the former.

RELATIVE NUMBER OF FEET TO WEIGHT.

Although there no longer exists the necessity for weighing Mahogany for the payment of a duty, nevertheless that operation is still required for ascertaining the freight, which is paid by the ton, gross weight. Returns are, however, made to the Custom-house, for statistical purposes, upon the estimated ton. The ton weight, if from the City of St. Domingo, in Logs, usually yields *for sale* from 290 to 310 feet, and from 270 feet to 290 feet in Curls; from other parts of Hayti, from 300 feet to 320 feet in Logs, and from 290 to 300 feet in Curls—in all cases varying as they are cut in accordance or not with these directions. From Cuba, the average is 290 to 300 feet to the ton; and from Honduras 330 to 350 feet to the ton.

The Wood being hard or soft has a material influence on the quantity of feet to the ton weight; the richer Wood, both Logs and Curls, being the heavier; and plain, soft pieces, in all cases the lighter. Thus the finer Wood gives the fewer feet to the ton weight; but by cutting Logs and Curls strictly in conformity with these suggestions, many more feet than the above to the ton weight would be yielded for sale measurement.

In the appendix, No. 6, will be found a table of imports of Mahogany into the United Kingdom, as well as into Liverpool, from the year 1838 to 1849, inclusive.

It will be seen by this table, that the Mahogany trade was languishing, with only a limited home consumption, when it was labouring under the absurd system, so long prevailing, of imaginary protection for the woods of home growth, not one of which had the least resemblance to, or could in any manner be a substitute for, the peculiar qualities and natural beauty of Mahogany. But no sooner had the duties been entirely removed, in 1845, than the trade revived with extraordinary elasticity, more particularly in Liverpool, where the imports of the year 1849 became nearly four fold of what they were in 1842. At first sight the diminished imports, in the years 1847 and 1848, would seem to contradict this position, but it will be easily understood that the causes were only temporary, when it is remembered that the demand in 1847 throughout Europe for grain, suddenly advanced the rate of freight, rendering it unprofitable to import so bulky an article as timber, the freight on which forms so large a part of its cost; and secondly, the universal commercial difficulties of that epoch were naturally felt in the Mahogany trade, as well as in all others. Happily these causes have now ceased to operate.

But there is still unfortunately another discouragement to the Mahogany trade, unjustly inflicted, chiefly on our own Honduras merchants, by the regulations of the Lloyd's Committee of Registry, which, as already pointed out, deprive Mahogany of its true rank in their tables for timbering and planking ships. The objections raised are not founded upon any inherent defects in the nature of Mahogany, but are solely based upon the alleged incapacity of their own officers (who nevertheless charge fees for their inspections) to prevent the introduction of sappy or unsound pieces of wood into a ship; an objection in itself applying with equal force against any other species of timber named in the tables, which cannot boast of being so universally known as Mahogany; for instance Teak, not seen in England until after the Burmese war, though Mahogany has been used for ship-building for three hundred years.

A strange anomaly also exists to the prejudice of British ship-building, paradoxically contrary to the axioms of free trade, and repulsive to common sense, inasmuch as a duty is still paid upon nearly all foreign timber wanted by the British ship-builder to compete with his rival abroad; and yet a foreign ship, constructed of these same materials, is itself admitted for sale in this country free of all duty whatsoever! It is to be hoped that such a palpable absurdity may be removed in the ensuing Parliament, now that the Chancellor of the Exchequer can no longer argue for the continuance of this grievance under the plea of a deficiency of revenue.

Could the British ship-builders hope to see a remedy for all these impediments to their launching first-rate vessels, (in the outports, as well as in London, to the particular advantage of which the Lloyd's regulations seem to have a tendency), and constructed of timber possessing the superior qualities of the fine woods of the Tropics, as well as of those produced in colder regions, they would attain every possible perfection in their art—and the countries herein enumerated, as well as our own possessions, could furnish an inexhaustible supply of every material for the accomplishment of this desirable purpose.

APPENDIX.

No. 1.

TABLE shewing the respective distances from England, New York and New Orleans, to the Port of San Francisco, in California, by the routes of Panama, Nicaragua, and Tehuantepec, compared with the voyages from the same places round Cape Horn, and shewing the distances each would respectively save by traversing the American Isthmus.

Voyage to San Francisco, in California.	Round Cape Horn	*Via* Panama.	*Via* Nicaragua.	*Via* Tehuantepec
	Nau. Miles.	Nau. Miles.	Nau. Miles.	Nau. Miles.
From England.... (departure from the Lizard)	} 13624	7502	7041	6671
From New York.	14194	4992	4531	3804
From N. Orleans.	14314	4505	3767	2704

		Distance Saved *via* Panama	Distance Saved *via* Nicaragua.	Distance Saved *via* Tehuantepec
		Nau. Miles.	Nau. Miles.	Nau. Miles.
Saved by England	....	6122	6583	6953
,, by New York	....	9202	9663	10390
,, by N. Orleans	....	9809	10547	11610

THE NICARAGUAN TREATY.

No. 2.

The following is the text of the Convention between the United States of America and Her Britannic Majesty, concluded at Washington, the 19th day of April, 1850 :—

The United States of America and Her Britannic Majesty, being desirous of consolidating the relations of amity which so happily subsist between them, by setting forth and fixing in a convention their views and intentions with reference to any means of communication by ship canal, which may be constructed between the Atlantic and Pacific Oceans by the River San Juan de Nicaragua, and either or both of the Lakes of Nicaragua or Mantagua, to any part or place on the Pacific Ocean ;—the President of the United States has conferred full powers on John M. Clayton, Secretary of State of the United States ; and Her Britannic Majesty on the Right Hon. Sir Henry Lytton Bulwer, a member of Her Majesty's Most Honourable Order of the Bath, and Envoy Extraordinary and Minister Plenipotentiary of Her Britannic Majesty to the United States, for the aforesaid purpose ; and the said Plenipotentiaries having exchanged their full powers, which were found to be in the proper form, have agreed to the following articles :—

Art. 1. The Government of the United States and Great Britain hereby declare that neither the one nor the other will ever obtain or maintain for itself any exclusive control over the said ship canal ; agreeing that neither will ever erect or maintain any fortifications commanding the same or in the vicinity thereof, or occupy or colonize, or assume or exercise, any dominion over Nicaragua, Costa Rica, the Mosquito coast, or any part of Central America; nor will either make use of any protection which either affords, or may afford, or any alliance which either has, or may have, to or with any state or people, for the purpose of maintaining or erecting any such fortifications, or of occupying, fortifying, or colonizing Nicaragua, Costa Rica, the Mosquito coast, or any part of central America, or of assuming or exercising dominion over the same; nor will the United States or Great Britain take advantage of any intimacy, or use any alliance, connexion, or influence that either may possess with any state or Government through whose territory the said canal may pass, for the purpose of acquiring or holding directly or indirectly, for the citizens or the subjects of the one, any rights or advantages in regard to commerce or navigation through the said canal, which shall not be offered on the same terms to the citizens or subjects of the other.

Art. 2. Vessels of the United States or Great Britain traversing the said canal shall, in case of a war between the contracting parties, be exempted from blockade, detention, or capture by either of the belligerents; and this provision shall extend to such a distance from the two ends of said canal as it may hereafter be found expedient to establish.

Art. 3. In order to secure the construction of the said canal, the contracting parties engage that if any such canal shall be undertaken upon any fair and equitable terms by any parties having the authority of any local Government or Governments through whose territory the same may pass, then the persons employed in making the said canal, and their property used or to be used for that object, shall be protected from the commencement of the said canal to its completion by the Governments of the United States and Great Britain from unjust detention, confiscation, seizure, or any violence whatsoever.

Art. 4. The contracting parties will use whatever influence they respectively exercise with any state, states, or Governments possessing or claiming to possess any jurisdiction or right over the territory which the said canal shall traverse, and which shall be near the waters applicable thereto, in order to induce such states or Governments to facilitate the construction of the said canal by every means in their power. And furthermore, the United States and Great Britain agree to use their good offices whatever or however it may be expedient so to do, in order to procure the establishment of two free ports, one at each end of the said canal.

Art. 5. The contracting parties further engage, that when the said canal shall have been completed, they will protect it from interruption, seizure, or unjust confiscation; and that they will guarantee the neutrality thereof, so that the said canal may be for ever open and free, and the capital invested therein secure. Nevertheless, the Governments of the United States and Great Britain, in according their protection to the construction of the said canal, and guaranteeing its neutrality and security when completed, always understand that this protection and guarantee are granted conditionally, and if both Governments or either Government should deem that the persons undertaking or managing the same adopt or establish such regulations concerning the traffic thereupon as are contrary to the spirit and intention of this convention, either by making unfair discriminations in favour of either of the commerce of the contracting parties over the commerce of the other, or by imposing oppressive exactions or unreasonable tolls upon passengers, vessels, goods, wares, merchandizes, or other articles, then it shall be open to either Government to seek redress in such manner as they may deem advisable. Neither party, however, shall withdraw the aforesaid protection and guarantee, without giving six months notice to the other.

Art. 6. The contracting parties in this convention engage to invite any state with which both or either have friendly intercourse, to enter into stipulations with them similar to those they have entered into with each other, to the end that all the states may share in the honour and advantage of having contributed to a work of such general interest and importance as the canal herein contemplated. And the contracting parties likewise agree that each shall enter into such treaty stipulations with such of the Central American states as they may deem advisable for the purpose of more effectually carrying out the design of this convention, namely, that of constructing and maintaining the said canal as a ship communication between the two oceans for the benefit of mankind on equal terms to all and of protecting the same. And they also agree that the good offices of either shall be employed when requested by the other in aiding and assisting the negotiations of such treaty stipulations. And should any differences arise as to right or property over the said territory through which the said canal shall pass between the states or Governments of Central America, and such differences should in any way impede or obstruct the execution of said canal, the Governments of the United States and Great Britain will use their good offices to settle such differences in the manner best suited to promote the interests of the said canal, and to strengthen the bonds of friendship and alliance which exist between the contracting parties.

Art. 7. It being desirable that no time should be unnecessarily lost in commencing and constructing the said canal, the Governments of the United States and Great Britain determine to give their support and encouragement to such persons or company as may first offer to commence the same with the necessary capital, with the consent of the local authorities, and on such principles as accord with the spirit and intention of this convention; and, if any persons or company should already have with any state through which the proposed canal may pass, a contract for the construction of such a canal as that specified in this convention, to the stipulations of which contract neither of the parties in this convention have any just cause to object, and the said persons or company shall have made preparations, and expended time, money, and trouble, on the faith of such contract, it is hereby agreed that such persons shall have a priority of claim over every other person or company to the protection of the United States and Great Britain, and be allowed a year from the date of the exchange of the ratifications of this convention for concluding their arrangements and presenting evidence of sufficient capital subscribed to accomplish the undertaking; it being understood that if, at the expiration of the aforesaid period such persons or company shall not be able to commence and carry on the projected enterprise, then the Governments of the United States and Great Britain shall be free to afford their protection to any persons or company that shall be prepared to commence and proceed with the construction of the canal in question.

Art. 8. The Governments of the United States and Great Britain having not only desired in entering into this convention to accomplish a particular object, but also to establish a general principle, they hereby agree to extend their protection by treaty stipulation to any other practicable communications, whether by canal or railway, across the Isthmus which connects North and South America, and especially to the Inter-oceanic communications, should the same prove to be practicable, whether by canal or railway, which are now proposed to be established by the way of Tehuantepec or Panama. In granting, however, their protection to any such canals or railways as are by this article specified, it is always understood by the United States and Great Britain that the parties constructing or owning the same shall impose no other charges or conditions of traffic thereupon than the aforesaid Governments shall approve of as just and equitable; and that the said canals or railways being open to the citizens and subjects of the United States and Great Britain on equal terms shall also be open on like terms to the citizens and subjects of every other state which is willing to grant thereto such protection as the United States and Great Britain engage to afford.

Art. 9. The ratification of this convention shall be exchanged at Washington within six months from this day, or sooner if possible. In faith whereof we the respective Plenipotentiaries have signed this convention, and have hereunto affixed our seals.

Done at Washington the 19th day of April, Anno Domini, 1850.

JOHN M. CLAYTON (L.S.)
HENRY LYTTON BULWER (L.S.)

THE TEHUANTEPEC TREATY.

No. 3.

CONVENTION BETWEEN THE REPUBLIC OF MEXICO AND THE UNITED STATES OF AMERICA.

The Republic of Mexico and the United States of America, being convinced of the benefits which would accrue to both nations from the construction by a company of a transit way across the Isthmus of Tehuantepec, with the view of facilitating communication between the Atlantic and Pacific Oceans, have thought proper to encourage such communication, and to that end the Most Excellent Senor President of the Republic of Mexico has fully authorised Senor D. Manuel Gomez Pedraza, and the President of the United States of America has conferred plenary powers on the Hon. Robert Letcher, accredited as Envoy Extraordinary and Minister Plenipotentiary of the United States of the North, near the Mexican Government, and the said Plenipotentiaries, after having exchanged their credentials, which were found to be in good and proper form, have agreed to the following articles:—

Article 1. The person to whom the Government of Mexico may have conceded, or hereafter may concede, the privilege of constructing a railway or canal, which, crossing the Isthmus of Tehuantepec, may connect the Atlantic and Pacific Oceans, and persons employed in the works of construction, shall be protected in their persons and property, from the commencement to the completion of the work, and during the time through which the privilege extends.

Art. 2. In case the Government of Mexico may not be able by itself to give the stipulated protection, the United States of the North shall furnish it effectively with land and naval forces; and the object of this treaty is to form an alliance between both nations in order to guarantee the protection of the work.

Art. 3. Either of the contracting parties, in order to furnish the said protection, may employ, with the restrictions and modifications hereinafter expressed, the military or naval force which may be judged necessary; and if the forces be those of the United States of the North, they shall be hospitably received in the ports of the Isthmus, and shall be permitted to occupy the line of the work or any part of it that may be thought proper.

Art. 4. The United States of the North shall furnish this assistance only in the event of its being required by the Mexican Government, expressed through the Minister of Relations of Mexico, or in the event of communications between the two Governments being interrupted on the requisition of the Minister Plenipotentiary of Mexico, near the Government of the United States of the North, or on that of its commissioner specially authorised, and residing on the line of the proposed road. The aid shall be rendered in the manner and terms, and only for the time, which the person making the requisition shall specify. In no case shall this auxiliary force be employed against the Mexican functionaries, as these will be compelled by their own Government to fulfil their obligations.

Art. 5. In case any difference arise between the Mexican Government and the present or future grantees *(empresarios)* which may occasion the loss of the privilege, the complaining party shall make a statement of it purposes and motives, and the other party shall make a similar statement, and both shall be submitted to two arbitrators, who have neither interest in the road nor official connexion with either Government, and who shall reside in Mexican territory. One of these parties shall be named by the holders of the privilege and the other by the Mexican Government, and these two, in case of disagreement, shall name a third having the required qualifications, and there shall be no appeal from the decision of the arbitrators. The Mexican tribunals shall take cognizance of any other questions.

Art. 6. If a loss of the privilege result from the decision of the arbitrators, it (the privilege) shall be sold at public auction under the conditions which the Mexican Government may impose, three months' notice of the sale being given to the public in two of the principal journals of Washington and Mexico. The sale shall be made by a commissioner named by the arbitrators. The product of the sale shall be delivered to the losers of the privilege, deducting for the Mexican Government all the expenses of judgment and sale. The legal excise *(alcabala)* shall be paid in Mexico. The commissioner shall give security for the management of his trust.

Art. 7. No Government or foreign corporations can acquire the privilege which only private individuals can purchase. The purchasers shall be obliged to prosecute the work to its completion, and to comply with the conditions imposed by the Government of Mexico on the original grantees *(concesionarios)* or any other conditions which the said Government may legally impose.

Art. 8. The contributions of tolls imposed on the citizens, officers, and property of the United States of the North, shall be the same and no higher than those imposed on the officers, citizens, and property of the United States of Mexico. But all the products of the soil or industry of Mexico shall pass at rates one-fifth less than those imposed on the same class of productions of the United States of the North.

Art. 9. It is agreed that the Government of Mexico shall have full power to concede the same, but not greater privileges than those which are here stipulated in its favour and that of the United States of the North, to any one or more of the commercial nations of the world or their citizens or subjects if it may be deemed expedient. But the privileges being a compensation for the engagement of guarantee made by the United States of the North, Mexico shall not concede the said privileges to any other nation until the said nation, through a treaty satisfactory to Mexico, shall give the same guarantee as the United States of the North.

Both contracting parties shall manifest their own intentions to permit all the commercial nations of the world to be participants in the benefits of this road or canal on complying with the conditions of this article.

Art. 10. Both contracting Governments bind themselves, conformably to the anterior provisions of this treaty, as far as they may be able, to maintain the neutrality of the route and ten leagues on each side as Mexican territory, not only in time of peace, but during war, whether one of the two nations be engaged in hostilities with another, or the two parties be at war between themselves; it being understood that the route shall be free and secure in time of peace for all kinds of transportation of goods and merchandize, arms and munitions; but in time of war only merchandise or goods, not contraband of war, shall be free; the latter being prohibited. Notwithstanding neutrality of the route and of ten leagues on either side, Mexico preserves fully the sovereignty of the said route and territory, exercising jurisdiction over the persons or vessels that may pass, equally as over those that may be in its other ports and territories, and the customary salutes shall be fired in said ports.

Art. 11. If the holders of the privilege refuse to enter into a satisfactory arrangement in order to settle the toll or price of transportation, within twelve months from the date of this convention, or shall not comply with its engage-ments, the guaranteed protection to the work shall be immediately withdrawn. The tolls shall not be fixed or altered by the grantees *(empresarios)* without the approbation of the Government of Mexico. Any alteration in the said rates of toll shall comprehend both contracting nations according to the terms of Article 8, preserving the distinction in favour of Mexican products; and in case such alteration shall be carried into effect the Government of Mexico shall notify the Government of the United States of the North of the same within seventy days.

Art. 12. The present holder of the privilege shall give his consent to this treaty in writing, in order that within four months it may be recorded in the Department of Relations at Mexico, or in the Mexican Legation at Washington; of which fact the Government of the United States shall be notified. Before this the treaty shall not be submitted to the Mexican Congress or to the Senate of the United States of the North.

Art 13. This treaty shall be ratified and exchanged in Mexico and Washington within nine months, and, if that is not possible, within twelve months from its date.

In faith of which, we, the Plenipotentiaries of the Republics of Mexico and of the United States of America, have hereto put our hands and seals.

Done in the city of Mexico, on the 23d day of June, in the year ot our Lord 1850, in the 30th of the independence of the Mexican Republic, and the 75th of that of the United States of America.

MANUEL G. PEDRAZA.
R. P. LETCHER.

No. 4.

DOCUMENTS

PRESENTED TO LLOYD'S COMMITTEE FOR THE REGISTRY OF BRITISH AND FOREIGN SHIPPING, in support of the Memorials of the Honduras Merchants claiming the insertion of Mahogany as a first class wood in the tables for the construction of vessels of the twelve years' grade.

A

DOCUMENTS No. 1 to 18.

PRESENTED 11TH JUNE, 1846.

No. 1. *R. Menzies and Son, Ship-builders, Leith, 1st March,* 1840.

We hereby certify that we have purchased several parcels of Honduras Mahogany for our Ship-building purposes, for which we think it very well adapted; and we feel satisfied if it could be imported at a sufficiently low rate, that it would be generally used by the Ship-builders.

No. 2. *Curling Young and Co., Limehouse, March 7th,* 1840.

We hereby do certify that we have used, and are continuing to use in Ship-building, Mahogany from the British Settlement of Honduras, and are satisfied that it is well adapted for such purposes.

No. 3, *W. and A. Adamson, Sunderland, 9th March,* 1840.

We hereby certify that we have purchased Mahogany from the British Settlement of Honduras for Ship-building, and are of opinion it is suitable for that purpose.

No. 4. *John Arrowsmith,* 13, *Green's-row, Chelsea,* 8*th February,* 1841, *and corroborated by Wm. Cox and John Weller, to James Hyde, Esq.*

Agreeably to your request, I have to report that my attention has been drawn since 1815, to the suitability of Mahogany, the produce of Her Majessy's Possessions in the Honduras, for Ship-building, and I can, from my knowledge of its strength, durability, flexibility, and buoyancy, cordially recommend it for that purpose in this country.

As an instance of its adaptation under the most trying circumstances, I may mention that the Eliza, Brigantine, (180 tons Register) was built at Honduras, in 1818-19, having all her timbers of such Mahogany, and nearly all her planks of the same. This vessel since then, has been constantly employed as a Drogher, carrying cargoes of the largest and heaviest wood, from the distant rivers, to Belize; and from not having any main hatches, her planks and timbers have all along been exposed to the injury of great heat and heavy rains, common in that country; yet in 1833, when it was determined for the first time, under my superintendence, to haul her up and inspect her, the entire frame (with the exception of a few floor timbers immediately under the open hatches,) was found perfectly sound; and even the few timbers excepted, were found only to be injured on the upper side, by crowbars used in stowing the heavy wood, and continued exposure to the rain. Now if we take into consideration the effects of the very hot and humid climate of Honduras, acting constantly upon the vessel outside and inside, and the constant rough usage in loading cargoes of heavy logs every three weeks, I think no severer test could be required to prove timber; and I therefore feel it my duty, (being influenced by no private interest whatever, to recommend Honduras

Mahogany to the ship-builders in this country, and you are at liberty to make such a use of this letter as you may deem proper.

No. 5. *Joshua Antram, London,* 19*th February,* 1842. *to James Hyde, Esq.*

Calling on you a few days back, you wished my opinion on the conversion of Mahogany into Ship-building, which I now beg to give as far as my knowledge of the the article goes.

I have been employed in the Honduras Trade from 1821 up to 1837; consequently have seen much of that article both in its growth and a variety of ways. When the trees are felled, the cutters select the main part of the tree, or the straight timber, throwing aside the crooks or branches, as useless for Cabinet purposes, but so desirable in this country for the timbering of ships for such may be obtained suitable to any mould; and having this essential property its non-decay, when confined from a free circulation of air or from dampness. I have seen this proved, having several boats in this country of the best seasoned English Oak, selected by myself, and taken to Honduras, but, before they were four years old, decay had so far taken place as to cause it to be necessary to rebuild them of Mahogany, and the same boats are now running; but as a greater proof of the durability of Mahogany, a boat belonging to myself, built by Mr. T. Potts, about 1810, was sold by me in 1825. The party who bought it resolved on rising on her, and on stripping the upper works, the timbers were found perfectly sound, and the wood scarcely stained. From the above and other observations, too numerous to detail, I consider that Mahogany, from its durability and flexibility, to be superior to English Oak, and equal to any timber now in use for Ship-building.

No. 6. LONDON, 18th October, 1845.

We, the undersigned, having been long practically acquainted with the cutting up of Honduras Mahogany, do certify that the plank becomes more and more hard according to the time it is exposed to the air, that it is very durable, is not subject to dry-rot, and after seasoning does not shrink. We cordially recommend it for Ship-building purposes.

Signed,

Richard Goodman, having known the wood for	50	years.
Joseph Belletti . . .	40	,,
John Lilley	45	,,
Wm. Andrews . . .	10	,,
Thos. Bennett . . .	28	,,
T. Gabriel, and Sons . .	35	,,
N. Saxton	18	,,
Tuely and Co. . . .	30	,,
Chas. Shadbolt jun., and Co. .	20	,,
Jas. Latham	30	,,
Wm. Locks	12	,,
Benj. Ingram	56	,,
T. Newton and Sons . . .	50	,,
Wm. Smith	30	,,
W. S. Turnley { Honduras Mahogany is considerably more buoyant than Oak or Teak, and not liable to splinter by shot, }	30	,,
T. R. and W. Browning and Co. .	45	,,
W. Oliver	30	,,
John Wood	30	,,

No. 7. *O. Lang, Royal Dock-yard, Woolwich,* 17*th Nov.* 1845, *to John Hodge, Esq.*

In reply to your letter of the 16th inst., requesting my opinion with regard to Honduras Mahogany, I can say I have a very high opinion of that wood, and consider it not only fit for planking, but also for the frame timbers of ships of any description, having experienced its efficiency and durability for at least 26 years in her Majesty's Steam-vessels and other Ships of War.

No. 8. *Wm. Vaughan, London,* 16*th May,* 1846.

I have been in Honduras 25 years, and had much to do with Droghers and other vessels built with Mahogany of the country, and I have found that where proper judgment was made use of in the selection, that it would outlast Oak and other woods, of which English vessels were built.

No. 9. *Memorial of I. M. and L. Gales, John Candlish, John Stobart, R. Hutchinson, S. P. Austin, Philip Laing, James Leithead, and John Crown; dated Sunderland,* 18*th May,* 1846. *To the Committee of Lloyd's Registry of Shipping, London.*

In consequence of the great scarcity of high class wood for Ship-building, we are induced to take the liberty of drawing your attention to Mahogany. It is a wood, the durability and strength of which is well known, and we think it is entitled to a higher classification than your rules at present permit; therefore we beg to submit to your consideration, that it be allowed in future to be used for timbering and planking in any part of ships for twelve years grade.

No. 10. *Capt. Sir William Symonds, R.N., Surveyor of the Navy, Admiralty,* 24*th May,* 1846.

Having had the opportunity of forming a judgment of the good qualities of Mahogany as a material, suitable for Ship-building, I hold that wood in great estimation, and having employed it largely in the construction of ships in Her Majesty's Navy, I can with confidence recommend it for more general use in the construction of the Mercantile navy of the country.

I consider its durability of a high order, when properly selected with the due regard that ought to be exercised in the preparation of all woods for first class ships.

No. 11. *J. W. Fincham, Royal Dock-yard, Portsmouth, 2nd June,* 1846. *To Robert Dale, Esq.*

My absence from home on duty prevented my attending to your request sooner. As regards my opinion of Mahogany for Ship-building purposes, I beg to state, *as my own opinion,* it is excellent wood when well selected for Ship-building. It is more particularly useful for Planking, Beams, and Shelf-pieces, when in long lengths, straight and fair: small and fair curvatures make it likewise useful. I have considered it durable, and this opinion has been borne out in what I have observed in ships when broken up. Of course it requires attention in selection, as that of an open and porous nature, and very light in colour, is not good; it requires to be close grained and hard. I believe the Spanish wood is the best, when well selected.

No. 12. *James M. Wood, Liverpool, 2nd June,* 1846. *To Messrs. Chaloner and Fleming.*

With respect to the durability of vessels built of Mahogany and Cedar, I have two vessels constructed of those materials, one of them is called the "Rival," built in Kingston, Jamaica, now 17 years old, and as to the durability of the material, I court investigation.

The other Ship, named the "Treasurer," built at Bermuda, of similar materials to the "Rival," I consider equally substantial, and I feel with confidence and satisfaction, that vessels constructed of Mahogany and other hard woods of a similar kind, if better known by the public, would be extensively used.

No. 13. *Edward Chaloner, Liverpool, 2nd June,* 1846.

I hereby certify that I have been for upwards of 30 years acquainted with Mahogany, and have been in daily communication with the buyers, sellers, and consumers of that wood, and have therefore had the means of becoming thoroughly acquainted with its various excellent qualities; and I fearlessly, disinterestedly, and honestly assert, that in my opinion, there does not exist a better wood, nor I I think one more suitable for Ship-building of the very highest class. With enduring qualities exceeded by no other wood, it is not liable to the objections that obtain against Teak and Cedar, happily reconciling both, being neither so heavy as the former, nor so light as the latter. It shrinks less from heat, and expands less from saturation than any other wood, and is less liable to dry-rot. I beg therefore respectfully but earnestly to urge on the Committee of Lloyd's Registry of British and Foreign Shipping, a classification equal to that of African and Moulmein Teak, as until such is conceded, it cannot enter largely into the construction of the Merchant vessels of the highest standing in the country.

No. 14. *O. Lang, Royal Dock-yard, Woolwich,* 10*th June,* 1846. *To John Hodge, Esq.*

I wrote to Devonport and received in answer to my letter, that the Mahogany found in all the old ships was sound, and of very great age, plank and beam. The timbers *not* Mahogany were decayed, which caused the ships to be broken up; with regard to strength, it appears to have been strong enough for those ships, and also for the Comet, which vessel has had very hard and constant work in very heavy gales of wind, frequently towing, &c., during the last 23 years, and she has not yet come under repair.

No. 15. *James Shepherd,* 1, *Lime Street Square,* 10*th June,* 1846. *To R. Dale, Esq.*

I had the ships Blanche and Scourfield repaired with top-sides of Mahogany five years ago, and to all appearance it is as good as when put in; in fact I prefer Mahogany to any wood but India Teak.

No. 16. *Memorial of T. Pearson, Thomas Royden, W. and A. Adamson, Ashley Clayton and Co., P. Chaloner Sons and Co., John Dawson and Co., William Gaskell and Co., and W. B. Jones and Co., Ship-builders, Liverpool, 9th June,* 1846, *to the Committee of Lloyd's Registry of British and Foreign Shipping.*

As Ship-builders carrying on business in Liverpool, we have for several years suffered much loss and inconvenience, from the shortness of supply of Ship-building woods suitable for twelve years ships, and we are sorry to say we have from year to year seen that supply narrowing instead of increasing; our great object ought to be, therefore, to promote a supply from as many sources as possible, and we see no field likely to produce such as the Mahogany districts which yield woods, which we esteem very highly, and would use very largely, if we were enabled to introduce them into twelve years' ships. We regret, therefore, to see by your rules lately published, that you have not extended the use of Mahogany throughout twelve years' ships, confining it to two parts only, although you have admitted it into all parts of a ten years' ship. The effect of this limitation is very much to restrict its use, while if equally classed with Moulmein and African Teaks, it would be very extensive, as the Importers require a demand resulting from such classification to induce them to import large quantities of suitable lengths, and in all the various shapes most suitable for Ship-building purposes. At late sales here, large quantities of Mahogany were sold at prices not more than two-thirds of the present price of Moulmein Teak, and while it is an equally valuable wood, it is a most important consideration to us as Builders, to have the opportunity of obtaining our material on more reasonable terms. Before the removal of the Customs' Duties on Mahogany, the price ruled so high as to put it beyond our reach, otherwise we should long ere this have brought this matter under your attention; but now that the abolition of all duties is daily opening new sources of supply, it but requires your better classification to enable us to use it most extensively and beneficially, not only to ourselves but to that large and influential class, the Owners of British built Ships.

Our request consequently is, that you will be pleased in your publication of New Rules to admit it to the same classification as Moulmein and African Teaks, leaving it to your Surveyors and ourselves to exercise that discretion in the selection of proper wood, and the rejection of any such as may be improper, as is now used in regard of African Teaks and other woods.

No. 17. *Memorial of Messrs. Collmann and Stolterfoht, Joseph Mondel, Richard Sheil and Co., William Rose and Co., Thomas Hibbert, Henry Killick, Bernard Hall and Co., John Grahame and Co., Imrie and Tomlinson, Jas. M. Wood, Edward Lloyd and Co., J. W. Cater and Co., John Carmichael, and John Holme, all Importers of Mahogany, dated Liverpool, 2nd June,* 1846, *to the Committee of Lloyd's Registry of British and Foreign Shipping.*

Observing by your rules lately published, that you have been revising the classification of woods for Shipbuilding purposes, we have been much disappointed to find that you have restricted the general use of Mahogany to 10 years ships, and only admitted it to two parts of 12 years ships, thereby materially limiting the demand and supply, both of which would be great, if the wood had its full classification, which we will show you by various certificates and other documents, copies of which accompany this letter, it is fully entitled to.

The reason that the Mercantile Navy of this country has hitherto had so little experience of this wood, is, that until very lately the high duties which were exacted on it precluded it from general application; therefore its use was confined to the government dock-yards, where quality of wood and not price was the first consideration. The test by experience therefore in this country is in a great degree confined to the ships of Her Majesty's Navy; but these abundantly supply instances of the excellence, durability, and valuable properties of the wood; and we consequently now come forward to ask of your Committee that high classification it so eminently deserves, and to request of your admitting it amongst those woods admissible into 12 years ships.

Mahogany has long been in use in Her Majesty's Navy; in 1820, very large quantities were employed, and then Government paused to observe how it would stand the wear and tear and vicissitudes of climate; and the result has been so satisfactory, that within the last few years, again vèry large contracts have been entered into, and many large Steamers and Men-of-War have been, and are being constructed almost entirely of Mahogany. The "Terrible" Steamer is almost entirely built of Mahogany, and it enters largely into the construction of the "Royal Albert," 120 guns, now building at Woolwich, and as a test of its endurance, now under the vissitudes of climate, we have authority to state that the "Comet," Man-of-War Steamer, which has been running for 23 years in all climates, built almost entirely of Honduras Mahogany, was examined the other day, and her timbers proved perfectly sound. Captain Sir W. Symonds, Surveyor for the Royal Navy, has kindly given his testimony as to its merits, and recommends its more extended use; and Oliver Lang, Esq., Master Shipwright at Woolwich, has also added the weight of his testimony. We have numerous other certificates in support of its high character, and the old Spanish built ships, lately broken up, afford abundant evidence of the most conclusive kind.

The practical effect of the limitation in use of a first class wood like Mahogany, is to narrow the supply of Ship-building wood, and thus to transfer the Ship-building trade to the Colonies, where a class of ships is produced that most materialy interferes with, and successfully supersedes, the English built ship.

The Teak of Africa varies very much in its character and quality, and yet it is all classed under one general head, reserving, and very properly, to the Surveyor, the right of rejecting any spurious or inferior timber. We claim the same privilege for Mahogany, much more highly certified and tested than African Teak ever yet has been, leaving it for the Surveyors and Ship-wrights to decide on the proper kinds for use in the various parts of ships, and of course exercising that due discrimination in selection, that ought to be used in the preparation of all woods for first class ships; and it but requires its admission into twelve years' ships, to ensure for it such a general application, as will promote an immense increase in the import of the most suitable descriptions for Ship-building, with crooks and all the various forms best adapted for the purpose; and we venture to hope that as the present is the time of year for issuing your new Tables, that Mahogany may be classed in the same scale as African and Moulmein Teaks.

No. 18. *Charles Graham, Esq., Secretary to Lloyd's Committee for the Registry of British and Foreign Shipping, to R. Dale, Esq., 25th June,* 1846.

With reference to my letters dated the 13th instant, relating to the applications from the Shipwrights and Importers of Mahogany at Liverpool, in regard to the suitability of that wood for Ship-building purposes, and suggesting that its use should be extended in ships of the highest grade, I am directed to acquaint you, that the Committee have again given this subject a careful consideration, with an anxious desire to meet the wishes of the parties who signed those applications ; but that although the Committee see no objection to the use of Mahogany for the outside planking of vessels of the twelve years' grade, from the "light water mark to the wales," and have determined to alter the Tables accordingly, they are not prepared to give their sanction to its use in vessels of this high character to a greater extent than has already been decided.

B

DOCUMENTS No. 19 to 40.

PRESENTED TO LLOYD'S COMMITTEE FOR THE REGISTRY OF BRITISH AND FOREIGN SHIPPING, 25TH AUGUST, 1846.

No. 19. *J. W. Fincham, Royal Dock Yard, Portsmouth,* 1*st July,* 1846, *to R. Dale, Esq.*

I should have answered your letter respecting the suitability of Mahogany for the principal timbers of ships before, but have been absent on duty; I have no doubt but it would answer well for the whole of the timbers you mentioned, provided there is the proper curvature, and the more curvature the more value, as compass timber is scarce.

No. 20. *J. W. Fincham, July* 7, 1846, *to R. Dale, Esq.*

The timbers you enquired about were the timbers of the frame, as floors and futtocks, stem and stern posts, keelson, apron, transom, and deadwood ; for all of which Mahogany would be useful, if of proper growth.

No. 21. *Richard and Henry Green, Blackwall,* 4*th July,* 1846, *to R. Dale, Esq.*

In answer to your enquiry as to whether we consider Mahogany suitable for the under-mentioned purposes, viz. 1st, 2nd, and 3rd, futtocks and top-timbers, floors, stem and stern-posts, transoms, knightheads. hawse-timbers, aprons, deadwoods, wales, black-strakes, sheer-strakes, plank-sheer, and water-ways :

We beg to say, should the timber be procurable of suitable growth, we consider it might be used with great propriety in a first-class vessel, did the rules of the Committee of Lloyd's Registry of British and Foreign Shipping admit of it ; as it is known to be very durable and for the upper timbers and planking, recommends itself, as being lighter than other descriptions of wood now in use.

No. 22. *K. Wood and Sons, Maryport, 9th July,* 1841, *to R. Dale, Esq.*

In answer to your enquiries of the 8th instant, we are quite of opinion that Mahogany of suitable curvature or formation, might prudently be used in vessels of the first class, for stem and stern posts, floors, 1st, 2nd, and 3rd. futtocks and top-timbers, transoms, hawse-timbers, aprons, wales, black-strakes, sheer-strakes, and water-ways.

It is a wood we have a high opinion of, inasmuch as we have found it less defective than most other Shipbuilding woods, and possessing two important qualities—lightness and durability.

No. 23. *Capt. E. Chappell, R.N., Secretary of the Royal Mail Steam Packet Company,* 15*th July,* 1846, *to R. Dale, Esq.*

Capt. Mangles has requested of me, to reply to your letter addressed to him, and dated the 8th instant. What I stated to you was that I had seen the Gibraltar 80 gun ship broken up at the Royal Dock Yard, Pembroke. This ship was constructed *entirely of Mahogany;* she was built by an Englishman at the Havanna; and I believe she was captured from the Spaniards by Sir George Rodney, in his victory over Don Juan de Langara, off Cape St. Vincent in 1780, consequently, when taken to pieces, she must have been one of the oldest ships afloat; yet all her timbers were as sound as when they were put into her; and the whole British Navy, if I am not mistaken, are now supplied with tables made out of the Gibraltar's timbers.

When I was superintending the construction of the Royal Mail Steam Packet Company's large ships, I sanctioned the introduction of Mahogany where it could be applied without bending, particularly on board the Forth, built by Mr. Menzies of Leith; and I only wish the quantity of Mahogany put into our ships had been made the rule rather than the exception.

No. 24. *Extract from a Letter from Sir J. M. Brakenbury, dated Junior United Service Club,* 15*th July,* 1846, *to Messrs. Chaloner and Fleming.*

"I have received your letter of the 4th instant, and will endeavour to facilitate your inquiries, and obtain facts respecting the superiority of Mahogany for use in Ship-building.

"I have a friend of great intelligence, himself a ship-owner, and who has navigated his own vessels to the East and West Indies, and also round Cape Horn. He was 16 years in South America, nearly 5 years in command of ships built of Mahogany, and of the other woods of that country. He says:—

"'In the decks or top sides, where Mahogany or Paraquay Cedar was used, he had much less caulking to do. The carpenter used constantly to exclaim, when he was called on to caulk the ship, 'I wish she was all built of Mahogany.' He says also: 'I should decidedly give a preference to a ship built of Mahogany, particularly as in a hot climate it is more durable, and keeps its form better than other woods. This is the reason why Herald Painters use it to paint on."

"The gentleman who gave the above opinion, was Capt. Turner, 80, Cornhill."

No. 25. *Robert Clarke and Sons, Liverpool,* 20*th July,* 1846, *to R. Dale, Esq.*

Having been requested to state our opinion of Mahogany, as a Ship-building wood, we beg to say we consider it in every respect suitable for a 12 years' ship, where the same attention is observed in its selection as is exercised in regard to any other description of high class wood.

No. 26. *Thomas Milcrest, (late Humble and Milcrest,) Liverpool,* 21*st July,* 1846, *to R. Dale, Esq.*

In answer to your inquiry as to whether Mahogany in my opinion is suitable for Ship-building, I beg to state, that I consider it is the most suitable wood that I am acquainted with for the upper timbers and planking, and other parts, where the proper curves can be obtained.

No. 27. *William Whittle, Master of the Caleb Angas,* 14*th July,* 1846.

This is to certify that I, William Whittle, who have been master of a ship nearly thirty years in the Honduras trade, have been in the habit of putting in, and using Mahogany in planks, waterways and beams, and other important parts of a ship, and have seen others do the same to great advantage, both for length, strength, and duration; and should prefer it to English Oak, both for bearing the the sun, and for lengths, and far before African Oak, being clear of those heart shakes which African so much abounds with, and equal to or before Teak, unless it were very sound.

No. 28. *Capt. George Alexandre, London,* 23*rd, July,* 1846, *to John Vaughan, Esq.*

I have to state that I am the owner of the Barque "Othello," which was built in Jersey, and is now on her voyage to Honduras, and was lately under repairs in Mr. King's Dock, Rotherhithe. During these repairs, she presented to view the stem, which is one solid piece of Honduras Mahogany, which was put into her when she was built, in 1827. And the late inspection of it proves it to be as sound as the day it was put in, and has not the least defect after so many years standing. The "Othello" was in 1841 lengthened, and at that time many pieces of her frame, which are also of Mahogany, were found to be in perfect condition. The Ship-wright in Jersey who repaired her was Mr. Clarke, and he can testify to the same fact.

I have been now 20 years in the Honduras Trade, and can attest of my own personal knowledge, having witnessed the repairs of a Schooner at Honduras upwards of 35 years old, the whole of its frame being built of Mahogany, and every part being perfectly sound. I recollect also another Schooner, the "True Blue," repaired in Honduras, and her framing, which was also of Mahogany, was in perfect condition after being up more than 17 years.

With my knowledge of the use of Mahogany as adapted to Ship-building, I would by preference use it in Water-ways, and in all planking, both inside and out of a vessel. I have known it employed in the futtocks and other framing of the vessels built for the climate of Honduras, where, from the nature of the trade along the coast, the Droghers and other craft are exposed to the severest test of their durability, and from its being perfectly free from dry-rot, whilst all parts of a ship in the tropics built of the best oak decay rapidly, in a very few years.

Any further information I can give is much at your service, or if necessary I should be happy to repeat these to Lloyd's Surveyors. I must here remark that the Surveyors did inspect the stem of the "Othello" above referred to, and at that time I was under the impression that it was African wood, but, on reference, it was found to be actually from Honduras, having been purchased of Messrs. Neel and Delandre, the senior partner of which firm can now testify to that fact. I have to add that when the "Othello" underwent an examination, on account of her having touched the ground, the black-strakes and bends, and other parts of the framing, were thoroughly examined, and all parts were perfectly sound, especially such parts where bolted through and through. On this occasion, many pieces of Oak were found decaying, and were then replaced with Mahogany. I can also assert that the caulking holds better between Mahogany than any other description of timber.

No. 29. *F. C. Clarke, Jersey, 6th August,* 1846, *to Capt. George Alexandre.*

I beg to acknowledge the receipt of your letter of the 3rd instant, inquiring about the framing of the Barque "Othello." In reply, I beg to state that when I lengthened the "Othello," in August, 1842, I took out a great many of her third futtocks and top timbers which were of Bay Mahogany, and having taken particular notice, I found they were as perfect as the first day they were put up. You also request of me to state whether I have seen Mahogany used in any vessel I may have repaired; I beg to say that I repaired a Spanish brig about two years ago, which had her sheer-plank, and covering board of Mahogany, and most of her upper works; when she was caulked, I found every thing good and perfect. I inquired of the Captain how long had she been built, and he told me from 23 to 24 years. I also have in my yard a piece of Mahogany, keel of a yacht, which has been under water for at least 30 years, and it is as good as the first day it was put to the vessel; and I have seen at Brest, in France, a ship of war broken up, built entirely of Mahogany, and which was upwards of 70 years of age; the timbers were as red and perfect as the first day they were put up; this was about 7 years ago. I have, therefore, no doubt of Mahogany being as good, if not preferable, for Ship-building than any other wood in the world.

No. 30. *William Pitcher, Northfleet Dock-yard, 27th July,* 1846, *to G. F. Angas, Esq.*

In reply to yours of the 22nd instant, I beg to state that it is my opinion that sound, hard, and well selected

Honduras Mahogany is suited to all parts of new twelve years' Merchant ships. Every thing depends upon the selection of this as of all other woods for the purpose of Ship-building, and if properly attended to and well seasoned, I consider it would be very durable, and not liable either to shrink or dry-rot.

If long and well squared, it is very economical, the offal being of much more value than that of any other wood at present used for Ship-building. I have no doubt of its being introduced to a very great extent, and forming a trade of considerable consequence to this country.

No. 31. *John Calman, Thomas Adamson, and David Calman, Ship-builders, Dundee, 24th July,* 1846.

We, the undersigned Ship-builders of the Port of Dundee, are of opinion that from the now well ascertained value of Mahogany, (say Honduras Mahogany,) as a material employed in the construction of ships there ought to be *no* restrictions in the use of it, in the construction of ships of the highest class.

No. 32. *John Lawson, Master of the ship Duke of Wellington, 25th July,* 1846, *to John Carmichael, Esq.*

Respecting your inquiries as to my knowledge of the fitness of Mahogany for Ship-building, I now beg to state that I have been sea-faring these 37 years, most part of which time has been in the Honduras trade; I have frequently had occasion to have such slight repairs done as was practicable at Honduras, in which case, I generally used Mahogany, and always with the most satisfactory result.

About fourteen years ago, I was Master of the brig Mariner, and I put four new beams, and several knees of Mahogany into her. She was heavily repaired some years after that, but these knees and beams were free from blemish, and I have no doubt they continue so to this day.

I was called on to survey the schooner Eliza, belonging to Messrs. Hyde and Co., about 13 years ago, at Honduras. She had run for many years, and wanted a heavy repair. She had, however, Mahogany in her stern-post, stem, topsides and bends, all of which were perfectly sound, and free from objection, exhibiting not the least appearance of dry-rot, which had destroyed other parts of the vessel. She was then repaired wholly with Mahogany, and is to my knowledge a good vessel at this day.

From what I have seen of this wood, I am perfectly confident of its good qualities for Ship-building, particularly for its surprising durability, and exemption from dry-rot, when other woods fail in contrast with it.

I should say it is perfectly eligible for 1st, 2nd, and 3rd futtocks, top-timbers, floors, stem and stern-post, transoms, knightheads, floor-timbers, aprons, wales, black-strakes, sheer-strakes, plank-sheer and water-ways.

In short, I am quite satisfied that when the value of this wood is properly known, and it is not so known or appreciated at present, it will become one of the most favourite timbers in the hands of the Shipwright.

No. 33. *Dr. Andrew Ure, M.D., F.R.S., &c., Analytical Chemist to the Board of Customs, London, 28th July,* 1846.

I have subjected to a series of careful chemical experiments, samples of Oak and of Mahogany timber, each dry, sound, and well seasoned, and find that the Oak is replete with acid matter, which strongly reddens, when extracted by decoction in pure water, test litimus paper, and also acts powerfully upon Iron and Copper, blackening or corroding the same very speedily.

I find that a decoction of the chips or shavings of Mahogany, of like strength, has hardly any reaction, and scarcely affects Iron and Copper.

I am therefore fully warranted to conclude, that Iron and Copper bolts and fastenings will waste much more rapidly in Oak at sea than in Mahogany, when each is employed in Ship-building.

No. 34. *Messrs. G. and C. Bishop.* 3, *Bennett's Hill, Doctors' Commons,* 28*th July,* 1846, *to R. Dale, Esq.*

In reply to yours of yesterday, we beg to inform you that we always prefer Mahogany for painting on (when it is for exposure to the weather,) from the following circumstances:—It is not so liable to shrink or warp, and from its fibrous nature, the heat of the sun does not cause it to split, as other woods will, and it is therefore altogether better adapted for the purpose for which we require it.

No. 35. *Extracts from Tredgold's Carpentry, pages* 231, 232, and 185.

"In a dry state Mahogany is very durable, and shrinks very little, and warps and twists less than any other wood, and holds glue better."

" Weight of a cubic foot of Mahogany is from 35 to 53 pounds."

" Weight of a cubic foot of seasoned Oak is 53 to 58 pounds."

No. 36. *Richard Pinney, Hemworthy, Poole,* 3*rd August,* 1846, *to R. Dale, Esq.*

With reference to your inquiries as to my opinion of the use of Mahogany in Ship-building, although I have had no experience in its use, one vessel came under my hands, in which it was largely used, and although she was an old ship, every part appeared to be perfectly sound; and I have no doubt, if properly selected, it would prove as durable as English Oak, and more desirable, being lighter than any other description of timber now used for building 12 years' ships.

No. 37. *Messrs. Thos. and John White, West Cowes,* 3rd *August,* 1846, *to W. Alexander, Esq.*

In answer to your inquiries respecting our experience in the use of Mahogany for Ship-building, we are of opinion that its durability is placed beyond doubt. Our Mr. T. White, in the year 1814, broke up a Spanish Man-of-war of about 1800 tons, in the building of which a large portion of Mahogany had been used, and which was all perfectly sound, and free from any appearance of decay.

To test its relative strength compared with other woods, we have this day prepared a number of pieces; and on trial, find the Mahogany stiffer than English Oak, East Indian Teak, American Elm, American Oak, Dantzic Fir, and Yellow Pine: finding the result so conclusive in favour of the Mahogany, we have, for the information of all parties, forwarded you the experiments themselves.

From the foregoing data, we are decidedly confirmed in our previous opinion, that this wood should stand second to none for all Ship-building purposes. *(For detailed Experiments, see* No. 40.)

No. 38. *John White, Ship-builder, West Cowes,* 3rd *Aug.,* 1846, *to W. Alexander, Esq.*

Enclosed you have the letter referring to the Mahogany.

I have forwarded to your address a small box, containing the experiments, and which are quite in favour of the strength of Mahogany over all woods.

You will perceive, by straining a piece of thread along, which piece has the greatest bow out: the thread representing the chord or string of the bow. I was pleased to see such a decided superiority, and thought at once that one fact would be more convincing than a multitude of arguments; and should it answer the purpose, I shall be quite satisfied in having been instrumental, in a small degree, of introducing the best wood for Ship-building purposes to the notice of British Ship-builders. (*See* No. 40.)

No. 39. *W. Alexander, Lloyd's,* 14*th August.* 1846, *to Messrs. Young, Harrison, and Co.*

In compliance with your request, I have to state that in the month of June, I attended by appointment at Messrs. Cubitt's premises, to inspect the various specimens of timber, comprising English and American Oak, African and East Indian Teak, Elm, Ash, Mahogany, and other woods, which had been placed about six years previously in a Fungus Pit, for the purpose of testing their powers of resistance to dry-rot; and I hereby certify, that every description of timber, except the Mahogany, was in a greater or less state of decay; the Mahogany alone being the only wood that was found to be in a perfectly sound state.

No. 40. *Experiments made by Messrs. Thomas and John White, of Cowes,* upon the stiffness and strength of Honduras Mahogany, compared with various other Shipbuilding Woods; showing under pressure the greater divergence of all the latter from the horizontal line when tried against Honduras Mahogany.

No.	Woods coupled together.	Curvatures in 1000 parts of 1 inch	Expressing the curve of Mahogany by 1000, then the other Woods are
1	Honduras Mahogany and	482 parts	1000
	Moulmein Teak.	518	1075
2	Honduras Mahogany	423	——
	and English Oak.	577	1364
3	Honduras Mahogany	407	——
	and Quebec Oak.	593	1457
4	Honduras Mahogany	398	——
	and American Elm.	602	1512
5	Honduras Mahogany	488	——
	and Dantzic Fir.	512	1049
6	Honduras Mahogany	370	——
	and Am. Yellow Pine.	630	1702

NOTE.—The specimens were of 1 inch square, and 22½ inches long, (their ends coupled together by rivets;) a wedge 1 inch thick was driven in between them: then a string drawn along between the specimens, marks on the wedge the difference of the curves of each wood.

C

ADDITIONAL COMMUNICATIONS.

No. 41.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING
2, WHITE LION COURT, CORNHILL,

3rd September, 1846.

TO GEORGE O'GORMAN, Esq.,
Honduras Merchants' Committee.

Sir,

With reference to my letter, dated the 27th ultimo, relating to your application for an amendment of the Tables for Planking and Timbering of Ships, as regards the use of Honduras Mahogany in vessels of the 12 years' grade; I beg to acquaint you that the Committee have this day resumed the discussion of this subject; but as they still feel that its importance involves many serious considerations, they have deemed it their duty to refer the Memorial and Evidence furnished by the Committee of Honduras Merchants to a Sub-committee, whose province it is to investigate these matters for further consideration and report, before they finally determine thereon.

I am, &c.,

CHAS. GRAHAM, Secretary.

No. 42.

NO. 1, BARGE YARD CHAMBERS,

October 1*st*, 1846.

TO CHAS. GRAHAM, Esq.,
Lloyd's Register of Shipping.

Sir,

As Chairman of the Honduras Committee, I beg leave to enclose a letter addressed to you by Mr. Lockett, the Chairman of the Liverpool Ship Owners' Association, together with three original letters from Mr. Jesse Hartley, Mr. Thomas Milcrest, and Messrs. Wm. & John Lockett, respecting the suitability of Mahogany for Ship-building purposes, all of which I doubt not will meet with due consideration by your Committee.

These documents have reached me this morning in a letter from Messrs. Wm. & John Lockett, who are owners of some thirteen vessels of large tonnage and of 12 years' grade, and who remark: "We cannot imagine on what grounds Lloyds refuse the use of Mahogany in every part of a ship of the 12 years' class. If we were contracting to build one, we would most decidedly prefer it to English Oak, provided it were allowed, being certain from observation and experience that it is preferable."

I am, Sir,
Your very obedient Servant,
WM. HARRISON.

No. 43.

LIVERPOOL SHIP OWNERS' ASSOCIATION,
September 29th, 1846.

TO CHAS. GRAHAM, Esq.
Lloyd's Register of Shipping, London.

Sir,

I am directed by a vote of this Society respectfully to press upon the attention of your Committee, the extreme importance of greatly relaxing the rules which at present so limit the use of Mahogany in Shipbuilding, as to render such wood of little practical value for that purpose, to the very great detriment, as we believe, of the character of British ships, the increased cost of Building, and the loss and injury of British Colonists; indeed we go the length of earnestly recording our opinion, that far from being proscribed for any purpose in Ship-building, the free and universal use of Mahogany in every part of the construction of a ship, should by all means be encouraged, convinced as we are by the results of very many experiments and long usage, that there is, on the whole, no species of wood (attainable in respect of price) so applicable to Ship-builders' purposes generally as Mahogany, which for some particular purposes, such as Crooks, affords facilities quite peculiar to itself. Its durability, too, seeming to exceed that of all others; it is wholly exempt from dry rot; and from the absence of Acid, combines better with Copper and Iron work than any other wood whatever.

We are aware of the opinion said to influence your Committee in placing the present restrictions on the use of this wood, viz., that the use of the softer quality would be prejudicial in Ship-building, a position which we admit in the abstract, but believe to be quite inapplicable to the facts of the case; inasmuch as that description of wood necessarily could not be used for any important purpose in Ship-building, because being much more valuable for Machinery purposes, it commands a price from 20 to 30 per cent. higher than the harder and better description, which is alone suitable for Ship-building.

It is obvious, too, that if the objection had been applicable at all, it would have extended to the use of British Oak, a considerable portion of which is notoriously of an inferior quality.

We beg leave, therefore, respectfully, but very urgently, to request the re-consideration of this subject by your Committee.

JOHN LOCKETT, Chairman.

No. 44. DOCK YARD, LIVERPOOL,
September 21*st,* 1846.

To JOHN LOCKETT, Esq., Liverpool.

Dear Sir,

In reply to your note of the 19th September, asking my opinion in respect of the durability of Mahogany for Dock and Ship-building purposes, I have to say, that I think many of the varieties of Mahogany are at least equal to the English Oak, and being free from the strong acidity contained in the English Oak, is less prejudicial to Iron work connected with it.

I have bought all the Mahogany I could meet with, of suitable quality and dimensions, which I have used in the construction of Dock Gates, and regret that larger quantities of Mahogany of longer dimensions are not imported.

I am, &c.

JESSE HARTLEY.

No. 45. LIVERPOOL, *September* 21*st,* 1846.

WM. LOCKETT, Esq. Liverpool.

Dear Sir,

In answer to your enquiry with respect to Mahogany for Ship-building in this country, I beg to state that I have always understood that the heavy duty was the only obstacle in the way of its use, and if that was removed there would be no other, as it is well known to last as long as any other timber; and for Ship-building purposes, I consider it the most suitable wood I am acquainted with, it being both light, strong, and very durable, and what I would myself prefer to any other wood I am acquainted with during a practice of 39 years.

I remain, &c.

THOS. MILCREST.

No. 46. LIVERPOOL, *September* 30*th*, 1846.

WM. HARRISON, Esq., London,

Dear Sir,

In answer to your note of yesterday, requesting to know our ideas of Mahogany for Ship-building purposes; if it was allowed by Lloyd's Regulations for vessels of the first or 12 years class, we should prefer it for every part to English Oak, as it is not so susceptible of rot, (particularly dry rot) besides which Iron and Copper do not affect it:—this we attribute principally to its being free from acid, which is not the case with Oak. If we were about to contract with a builder for a 12 years' ship, and the regulations would admit Mahogany for every part of a vessel, we would give it a preference over every other wood, as we are certain, from twenty years' experience, it is the most durable, besides having the excellent advantage of being much lighter than Oak or Teak. It has also other considerable advantages, as it can be got in very long lengths for planks, natural grown crooks, cant pieces, &c. all free from sap.

We are, &c.

WM. & JNO. LOCKETT.

No. 47.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING,
2, White Lion Court, Cornhill,
October 1*st*, 1846.

WILLIAM HARRISON, Esq., London.

Sir,

I have had the honour to receive your letter of this day's date, which, together with its enclosures, I immediately laid before the Committee for managing the affairs of this Society.

They were at the time sitting in deliberation on the Memorial received from the Committee of Honduras Merchants, soliciting the Committee's sanction to the unlimited use of Mahogany in every part of a vessel of the 12 years grade. Their final decision on this important subject has been officially communicated to Mr. O'Gorman, by whom the Memorial was forwarded to me; and on taking leave to refer you thereto, I have no doubt that it will be immediately laid before you as Chairman of the Committee of Honduras Merchants.

I am, Sir,
Your Obedient Servant,
CHAS. GRAHAM, Secretary.

No. 48.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING,
2, White Lion Court, Cornhill,
October 1*st*, 1846.

TO GEORGE O'GORMAN, Esq.,
Honduras Merchants' Committee.

Sir,

Adverting to my letters of the 27th August and 3rd ultimo, and the Memorial from the Honduras Merchants' Committee, dated the 25th August, praying the amendment of the Tables Nos. 1 and 2 for the Timbering and Planking of Vessels of the 12 years grade, "so as to allow of its use under the Society's rules in every part of such vessels." I am directed to acquaint you for the information of the Committee of Honduras Merchants, that with an anxious desire to meet their wishes so far as may be consistent with the important duties they have to perform, the Committee have carefully revised their proceedings in July and August last year, when it was determined to introduce Mahogany for the first time into the Tables alluded to, and again in June last, when several applications from the Importers and Ship-builders of Liverpool, on the subject, were laid before them by Mr. Dale.

Fully admitting the importance of the question of the further application, the Committee feel that in extending the use of Mahogany, without restriction in vessels of every grade, up to that of 10 years inclusive, they have already given ample proof of their desire to allow a great latitude for its being extensively employed, and it is consequently with extreme regret they have observed in an application which they have just received from the Liverpool Ship-owners' Association, that it is asserted that the rules as at present formed "so limit the use of Mahogany in Ship-building as to render such wood of little practical value for that purpose."

This assertion also appears the more extraordinary as in regard to vessels of the 12 years grade, the Tables allow the unlimited use of Mahogany for the planking inside; and also for the outside plank, the only restriction being in the Wales and Blackstrakes, and Sheerstrakes and Plank-sheers.

In the form of timber it is likewise allowed for the main Keelson and Beams, Hooks and Knees, and the Committee have now determined to allow it for Waterways and third futtocks and top timbers, but not for roughtree stantions.

The Committee greatly regret that it is still not in their power fully to accede to the wishes of the Committee of Honduras Merchants; but a sense of duty compels them to decline giving their sanction to the unlimited use of Mahogany in vessels of the 12 years grade, notwithstanding the several applications which they have received.

They believe that they have now done ample justice to the subject, and they trust they will be excused in frankly stating that they will not feel justified in the further agitation of this question, until at least sufficient time shall have elapsed for allowing a judgment to be formed on experience of the applicability of this material for all the purposes in Ship-building for which it is now admitted.

I am, Sir,
Your Obedient Servant,
Chas. Graham, Secretary.

No. 49.

HONDURAS MERCHANTS' COMMITTEE ROOMS,
3, Union Court, Old Broad Street,

October 15*th*, 1846.

To CHAS. GRAHAM, Esq.,
Secretary to the Lloyd's Register of British and Foreign Shipping.

Sir,

Having submitted to the Committee of the Honduras Merchants the letter you did me the honour to address to me on the 1st instant, as well as the letter to Mr. William Harrison as Chairman of the Committee, of the same date, I am now instructed to acknowledge their receipt, accompanied by the expression of their regret and great disappointment caused by this adverse decision upon their Memorial of the 25th August, apparently so contrary to the evidence of the numerous respected individuals who have borne testimony to the superior qualities of Mahogany for all the purposes of Ship-building.

It is also with regret that the Honduras Merchants feel themselves called upon to make any remark upon that portion of the letter of the 1st October, which dwells at so great length upon an observation not made by them; for on a reference to the third paragraph of their Memorial, the Lloyd's Committee will no doubt do them the justice to admit that they did therein "gratefully acknowledge the important modifications made in the Rules up to that date, in respect to the admission of Mahogany in 10 and 12 years' ships," and therefore they submit that such animadversions were wholly uncalled for in reply to their Memorial.

They now also appreciate at their just value the concessions which the Lloyd's Committee have still further thought proper to be allowed, in the use of Mahogany, in Waterways, Third Futtocks, and Top Timbers; esteeming nevertheless that justice is not done to their claims in the maintaining any restriction whatever to the free use of Mahogany in all parts of a vessel of the 12 years grade.

The Honduras Merchants in stating their case, have studiously avoided bringing to its support *the opinions* of any authority however respectable; they have appealed to well attested facts, and the experience of competent practical persons acquainted with shipping, in which Mahogany has been largely used from periods of 17 to 50 years, proving its durability in a perfect state in the British and Spanish Navies, as well as by examples in the Merchant Service, which are A1 in Lloyd's Books, whilst the question now contended for, is whether such a material of good quality, and approved of by the Surveyors in strict conformity with the well known rules, can resist decay for the increased term between a 10 and a 12 years' ship, without prejudice to the letter upon the Books.

This testimony does not appear to have been impugned, nor does the Lloyd's Committee in their answer, afford the clue to judge wherein it has been defective, no counter evidence having been produced or assigned for their decision.

The literal fact of Mahogany appearing for the first time in the body of the tables, as now stated in the letter of the 1st October, is no doubt true; but it is also notorious that in the year 1839, the Lloyd's Surveyors were instructed to consider the best Honduras Mahogany as equal to African Oak, this last being at that time upon the Tables for 12 years' ships; thus, at least 7 years practical knowledge, not merely one year as the letter might seem to read, has been obtained by them, and it would be but an act of justice to communicate to the parties interested, the results of such experience.

In this stage of the proceedings it ought not to be a matter of surprise, that the Honduras Merchants feel it due to themselves, and for the credit of the parties whose testimony is rejected, to ask for the production "of the Report of the Sub-Committee, whose province it was to investigate these matters," as stated in your official letter of the 3rd of September last.

However much the Honduras Merchants would deem it their duty respectfully to acquiesce in the recommendation of the Lloyd's Committee "to defer any further agitation of this question until there shall have been time to test by greater experience the possibility of extending the use of Mahogany in Ship-building," they cannot but sensibly feel that such an indefinite requirement is a direct impeachment of the respectability of the witnesses whose testimony already goes to periods more than double the assumed duration of a vessel entitled to the first class.

The Honduras Committee have, for the present, also to observe that the Imports of Mahogany this last year amounted to 38,351 Tons, or nearly 40,000 Loads, thus employing more than three times the amount of British Shipping than what is engaged in the Teak Trade (Asiatic and African included,) which amounted only to 11,137 Loads; and as the difference between the price of Honduras Mahogany and Teak is considerable, each year that the settlement of the Honduras claim is kept pending, is a very serious detriment to the British Ship-owners and Builders,—a consideration, alone of sufficient importance, which the Honduras Merchants presume they may not unreasonably plead in justification of their still earnestly, but respectfully, pressing their claims upon the notice of the Lloyd's Committee.

And in the name, and on behalf of the Committee of the Honduras Merchants, I have the honour of subscribing myself with the greatest respect,

Sir,
Your most obedient, humble servant,
GEOGE O'GORMAN,
Secretary to the Committee.

No. 50.

Lloyd's Register of British and Foreign Shipping.
2, White Lion Court, Cornhill,
October 23*rd*, 1846.

To George O'Gorman, Esq.,
Honduras Merchants' Committee.

Sir,

I had the honour to receive your letter of the 15th instant in due course, and I took the earliest opportunity in my power, subsequently, of laying the same before the Committee for managing the affairs of this Society.

The Committee, after having given the Statement therein contained an attentive consideration, feel it due to themselves to observe that in exercising, as they claim the undoubted right of doing, a free and unbiassed judgment upon the proposition of the Committee of the Honduras Merchants, that the use of Mahogany in ships of the 12 years' grade should be allowed without limitation, it was quite foreign to their feelings or intention, and they now totally disclaim it, to cast any discredit upon any of the parties whose testimony in favour of the use of the material had been adduced.

In arriving at the conclusion, to which after much deliberation, and the best consideration they could give to this subject, they came, they deem it right to repeat that they were influenced solely by a sense of duty, and, I am to add, that they see no reason whatever from anything that has since transpired, to induce them to depart from the determination which it was my duty to communicate to you in my letter of the 1st instant.

I have the honour to be, Sir,
Your obedient servant,
Chas, Graham, Secretary.

No. 5.

The comparative "Displacement" by a Vessel of 1000 *tons register, when built of British Oak or of Honduras Mahogany.*

The Timber employed in the construction of a vessel is generally estimated at about 1 load of 50 cubic feet to every Ton Register.

Of this, in a vessel of 1000 tons, there will be 800 loads of British Oak of the specific gravity of 55 lbs. to the cubic foot, they will consequently weigh ....Tons	982	
200 loads of Cedar, Pine, or other light Wood, for the decks, planking, &c, of 38 lbs. to the cubic foot, and they will weigh	169	
Masts, Spars, Anchors and cables, Sails and Cordage, Boats, Iron and Copper Bolts, &c. would be the same in all ships, whether of Oak or of Mahogany, say they weigh	100	
Total tons.........	1251	
Displacement, one-half.........Tons		625½
In a similar vessel, built of Honduras Mahogany, of the best description, of 44 lbs. to the cubic foot, 800 loads would weigh ....Tons	785	
200 loads of Cedar, &c., as above..............	169	
Masts, Spars, Anchors, &c., as above.........	100	
Total tons.........	1054	
Displacement, one half		527
Difference of "Displacement" in favour of Honduras Mahogany...Tons		98½

GEORGE O'GORMAN.

3, Union-court, Old Broad-street,
London, 20th Oct., 1846.

No. 6.

TABLE of IMPORTS, of MAHOGANY of every description, into the United Kingdom, for the years 1838 to 1849 inclusive; and of Mahogany from St. Domingo, Cuba, and Honduras respectively, into the Port of Liverpool for the same period.

Year. *	IMPORT INTO LIVERPOOL, FROM				Total Imports into the United Kingdom, from 1st Jan. to 31st Dec., in each Year.
	Saint Domingo.	Cuba.	Honduras.	Total.	
	TONS.	TONS.	TONS.	TONS.	TONS.
1838	2360	270	3666	6296	23336
1839	2540	972	4121	7633	25859
1840	1630	373	2716	4719	23115
1841	1865	200	2479	4544	19502
1842	2080	180	1128	3388	16938
1843	1510	765	2726	5001	20284
1844	3215	1766	4473	9454	25622
1845	5127	4458	4891	14476	38351
1846	3480	2819	7503	13808	40238
1847	3836	888	4045	7769	34009
1848	1603	2139	1757	5499	31668
1849	5121	1025	4911	11057	29012

* NOTE.—In the above Table for Liverpool only, the years commence from the 1st February and include 12 months, by extending to the 31st of January in the following year.

No. 7.—A TABLE, exhibiting the different descriptions of TIMBER of good quality, to be used in the Building of VESSELS, to remain on the FIRST DESCRIPTION of the CLASSES for Twelve and Ten YEARS.

No. 1.—TIMBERING.

Parts of the Frame of a Vessel.	CLASS *Twelve Years.*	CLASS *Ten Years.*
FLOORS.......	English } African } Oak Live } East India Teak Morung Saul Greenheart Morra	The same as in the preceding Class, and admit Live Oak and Red Cedar alternately. Adriatic } Spanish } Oak French } South American } Hard New South Wales } Wood Mahogany, and Cuba Sabicu.
1st FUTTOCKS..	English } African } Oak Live } East India Teak Morung Saul Greenheart Morra	The same as above.
2nd FUTTOCKS..	English } African } Oak Live } East India Teak Morung Saul Greenheart Morra	The same as in the 12 years' Class, and admit Live Oak and Red Cedar alternately Mahogany Cuba Sabicu.
3rd FUTTOCKS.. and TOP TIMBERS.	English } African } Oak Live } East India Teak Morung Saul Greenheart Morra	The same as above.
STEM STERN POST	English } African } Oak Live } East India Teak Morung Saul	The same as in the 12 years' Class, and admit Mahogany Cuba Sabicu
TRANSOMS .... KNIGHTHEADS HAWSE TIMBERS .... APRON.......... *DEADWOOD ..	English } African } Oak Live } East India Teak Morung Saul	The same as above.
MAIN KELSON..	English } African } Oak Live } East India Teak Morung Saul Greenheart Morra	The same as above and admit Adriatic } Spanish } Oak French } South American } Hard New South Wales } Wood Mahogany Cuba Sabicu Red Cedar
BEAMS, HOOKS, and KNEES.	English } African } Oak Live } East India Teak Morung Saul Greenheart Morra Mahogany Cuba Sabicu	The same as in the 12 years' Class, and admit Adriatic } Spanish } Oak French } S. American Hardwood *and for Beams only,* New South Wales Ditto and Red Cedar

* So far as regards the material to be used from the height of two feet above the rabbet of the keel.

No. 2.—OUTSIDE PLANKING.

Parts of the Outside of a Vessel.	CLASS *Twelve Years.*	CLASS *Ten Years.*
KEEL to the 1st FUTTOCK HEADS.	English } African } Oak Live } East India Teak Red Cedar Foreign White Oak * Elm Beech South American or any Hardwood Mahogany, Cuba Sabicu Spanish Chesnut	The same as in the 12 years' Class, and admit Pitch Pine Larch Hackmatack Tamarac Juniper Black Birch Cowdie Spruce
1s FUTTOCK HEADS to LIGHT WATER MARK.	English } African } Oak Live } East Indian Teak Red Cedar Foreign White Oak South American } Hard New South Wales } wood Mahogany, Cuba Sabicu Spanish Chesnut	The same as in the 12 years' Class, and admit Pitch Pine
LIGHT WATER MARK to WALES.	English } African } Oak Live } East India Teak Morung Saul Red Cedar Greenheart Morra	The same as in the 12 years' Class, and admit Adriatic } Spanish } Oak French } South American } Hard New South Wales } wood Mahogany Cuba Sabicu
WALES and BLACK STRAKES.	English } African } Oak Live } East India Teak Greenheart Morra Morung Saul	The same as in the 12 years' Class, and admit Red Cedar Mahogany Cuba Sabicu
TOP SIDES.	English } African } Oak Live } East India Teak Red Cedar Greenheart Morra Morung Saul	The same as in the 12 years' Class, and admit Pitch Pine Mahogany Cuba Sabicu
SHEER STRAKES and PLANKSHEER.	English } African } Oak Live } East India Teak Greenheart Morra Morung Saul	The same as in the 12 years' Class, and admit Red Cedar Mahogany Cuba Sabicu
WATERWAYS.	English } African } Oak Live } East India Teak Red Cedar Greenheart Morra Morung Saul Mahogany Cuba Sabicu	The same as in the 12 years' Class, and admit South American } Hard New South Wales } wood Baltic Fir Pitch and Red Pine Larch and Hackmatack Tamarac Junipec Cowdie

* The use of Elm in Ships above the Eight Years' grade, to be restricted to a height from the lower part of the Main Keel of *one-third* of the internal depth of the ship, measured *in midships* from the top of the Timber Strakes to the top of the Upper Deck.

No. 3.—INSIDE PLANKING.

Parts of the Inside of a Vessel.	CLASS *Twelve Years.*	CLASS *Ten Years.*
LIMBER STRAKE.	English } African } Adriatic } Oak Spanish } French East India Teak Morung Saul Red Cedar South American } Hard New South Wales } wood Mahogany Cuba Sabicu	The same as in the 12 years' Class, and admit other Foreign White Oak Spanish Chesnut
BILGE PLANKS.	The same as above.	The same as above.
CEILING. LOWER HOLD.	The same as above.	The same as above.
BETWEEN DECKS.	The same as above.	The same as above, and admit Pitch Pine Spanish Chesnut
SHELFPIECES.	English } Oak African } East India Teak Morung Saul Red Cedar Greenheart Morra Mahogany Cuba Sabica	The same as in the 12 years' Class, and admit Foreign White Oak Adriatic } Spanish } Oak French } South American } Hard New South Wales } wood Spanish Chesnut
CLAMPS.......	The same as above.	The same as above.

The following relaxation from the Rules applicable to Sailing Vessels will be allowed in favour of Steamers :—

Fir, (to be either Pitch Pine, Baltic Red Fir, or American Red Pine,) Larch, Hackmatack, or Juniper, may be used for upper Deck Beams, to an extent not exceeding *one-half* the number of Beams required according to the Vessel's tonnage.

The same materials may be used in the outside Planking from the first Foot-hook Heads upwards, excepting for the Wales, Sheer-strakes, and Plank-sheers.

The same materials may be likewise used in the inside Planking, excepting for the Bilge-planks, Shelf-pieces, and Stringers and Clamps.

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